

The Educational Role of Virtual Museums in Cultural Transfer: Ottoman Artifacts

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Summary

The use of virtual museums in cultural transfer is an interdisciplinary approach of significant importance. Virtual museums play a crucial role in cultural transfer by digitally preserving cultural heritage. This article examines the educational role of virtual museums as a key tool in cultural transfer, particularly in the context of representing Ottoman works in virtual museums. Museums, indispensable elements of cultural transfer and education in contemporary society, have gained the opportunity to reach wider audiences by transitioning into the digital realm. In this context, the representation of Ottoman works in virtual museums and its role in cultural transfer are highlighted. Virtual museums hold great educational potential. It is well recognized that the representation of Ottoman works in virtual museums has educational effects such as expanding learning environments, facilitating access to knowledge, and increasing cultural awareness. Therefore, the representation of Ottoman works in virtual museums, especially in the field of education, is addressed. This study evaluates the role of the representation of Ottoman works in virtual museums in cultural transfer and education, thus demonstrating the educational potential of virtual museums. The research illustrates that virtual museums serve as significant tools for the preservation and dissemination of cultural heritage, and the representation of Ottoman works in virtual museums contributes to this process. Using Ferdinand de Saussure's theory of signs, signifier, signified, this study examines the representation and educational role of Ottoman works in virtual museums.

Keywords: Virtual Museums, Cultural Transfer, Educational Role, Ottoman Works, Sign Analysis

Introduction

The use of virtual museums in cultural transfer is an approach of interdisciplinary importance. It is of great importance to ensure permanence by using visual materials and relying on first-hand sources. Especially for these fields, which include fields such as history, museums have an important place among visual materials and first-hand sources (Akbulak, 2012). The International Council of Museums has defined museums as permanent institutions that are at the service of society and development, open to the public, and researching, collecting, preserving, sharing knowledge and exhibiting materials that bear witness to the environment in which they live. The educational function of museums has been increasing both nationally and internationally in recent years (Ulusoy, 2010). It is stated that museum trips make learning the subjects easier, increase interest in the course and academic success, develop inquisitive, creative and historical thinking skills, and provide students with an aesthetic perspective. However, there are difficulties encountered in the implementation of museum tours such as financial, security, time, distance and transportation (Önder, Abacı and Kamaraj, 2009). In order to overcome this problem and provide access to different museums in the globalizing world, the concept of virtual museology has been developed.

One of the conditions of existence of the concept of culture is that it is in constant communication. Without a constant exchange of signs and codes between people, the objects and symbols that people produce by transforming nature cannot exist. Although there are various forms and means of communication, the exchange of signals is the basis of communication. (Atiker, 2010). Communication takes place in different ways, from a simple blinking movement to sending codes with smoke or electrical signals, or even influencing millions of people with a mass-capable tool. However, the aim of all types of communication is to convey meaning through signs. Signs are defined as actions, objects, concepts and structures that refer to something other than themselves. Every human action is aimed at producing culture, therefore social reality is full of various indicators (Vince, 2018).

Virtual museums have an important role in cultural transfer by transferring cultural heritage to the digital environment. Especially works from the Ottoman period constitute an important part of our rich historical and cultural heritage (Saraç, 2007). The Ottoman Empire left an important cultural and artistic legacy throughout its long existence. Architectural structures, handicrafts, manuscripts, clothing styles and many other areas bear the

traces of Ottoman culture (Bayram, 2013). These works are important not only in terms of aesthetics, but also in many fields such as history, architecture, art history and social structure. Virtual museums provide access to large audiences by digitizing such cultural heritage. Ottoman works are also exhibited in this digital environment, providing ease of access to people. This access is especially valuable for educational institutions and individual researchers. Virtual museums offer the opportunity to examine and research artifacts from the Ottoman period in an interactive way. Users can examine the works closely, access detailed information and even navigate through the works with virtual tours.

Cultural transmission means transferring a society's values, beliefs, traditions and art to future generations (Ambrose and Harris, 2014). Transferring the works of the Ottoman period through virtual museums is of great importance in terms of preserving this cultural heritage and transferring it to future generations. Virtual museums ensure that these works are not only preserved physically but also kept alive in the digital environment (Sherman and Craig, 2018). Virtual museums are an important tool in presenting artifacts from the Ottoman period in an educational manner. These museums play an effective role in the process of preserving, researching and transferring cultural heritage to future generations. Bringing Ottoman artifacts to large audiences through virtual museums is an important step in cultural transfer and more work needs to be done in this field.

This article addresses an important issue in the field of cultural transmission and education. It is examined how artifacts from the Ottoman period can play an educational role through virtual museums. At this point, how the Ottoman culture and historical heritage can be preserved in the digital environment and delivered to large audiences is discussed.

Method

In this study, the representation and educational role of Ottoman works in virtual museums were examined using Ferdinand de Saussure's theory of sign, signifier and signified. In this analysis, the following steps were followed: Semiotic Analysis of Virtual Museums: The focus is on the representation of Ottoman works in virtual museums and how they function as indicators.

Analysis of the Relationship Between Sign, Signifier and Signified: How the visual and textual representation of Ottoman works in the virtual environment reflects the cultural and historical values of real works, this relationship has been analyzed.

Determining the Educational Role: Evaluations have been made on what role the representation of Ottoman works in virtual museums plays in cultural transfer and education.

This method provided the theoretical framework of the study and made it possible to analyze the educational role of the representation of Ottoman works in virtual museums.

Within the scope of the research, various data sources were used to analyze the sign, signifier and signified of the representation of Ottoman works in virtual museums. The data collection and analysis process was carried out with the following steps:

Determination of Data Sources: Digital contents containing Ottoman artifacts in various virtual museums were determined. These contents were obtained from websites, virtual tour platforms, digital archives and similar sources.

Data Collection: Digital contents of Ottoman works were collected from the determined data sources. A data set was created by examining visual materials, texts, videos and other media elements.

Categorizing the Data: The collected data were categorized in the context of the concepts of indicator, signifier and signified. The digital contents used as indicators and the real Ottoman works represented by these contents were determined and classified and supported by the narrative.

Application of the Analysis Method: The categorized data were analyzed within the framework of Saussure's theory of sign, signifier and signified. The representation of Ottoman works in virtual museums has been examined in terms of the relationship between the sign and the signified, and its educational role has been evaluated.

Drawing Conclusions: The analysis results revealed various findings regarding the role of the representation of Ottoman works in virtual museums in cultural transfer and education (Yıldırım and Şimşek, 2006).

The Visual Communication and Technology

Visual communication and technology have played an important role in communication today (Vince, 2018). With the rapid development of technology, visual communication tools have become more accessible and have become an important tool used in communication. Visual communication is a form of communication in which people convey messages through visual images (Saraç, 2007). Visual communication aims to convey emotions and ideas using visual elements such as colors, shapes, graphics, photographs and videos. The role of technology in the field of communication has been an ever-changing paradigm with the development of communication tools. Technological tools such as computers, internet, mobile devices and social media have facilitated the distribution and access of visual elements used in communication (Sherman and Craig, 2018; Kara, 2023).

The digitalization of traditional media and communication tools has changed the nature of visual communication and led to the emergence of new communication models (Ambrose and Harris, 2014). Visual communication is a creative process that communicates through the combination of technology, creativity and design. Nowadays, rapid changes in technology and communication have developed virtual museums and displays connected to new generation technologies (Lanier, 2018). However, technological changes necessitate the constant renewal of communication methods and tools. Traditional visual communication methods are no longer sufficient and approaches that cannot renew themselves are losing their competitiveness (Schweibenz, 2004).

The New Generation Technologies Used in Visual Communication

New generation technologies used in visual communication emerge as communication tools and methods constantly evolve. These technologies enable visual content to be created, delivered and consumed more effectively. New generation technologies used in visual communication, especially those that play an important role in cultural transmission, are listed below.

The Virtual Reality and Use in Virtual Museums

Virtual reality is a technology that transports the user to a completely virtual environment. Through VR glasses and other devices, users experience an interactive experience with a 360-degree viewing angle. In visual communication, VR technology is used in product promotion, simulations, education and art projects (Bayram, 2013). Virtual Reality (VR) is considered a highly effective tool for cultural transmission. Virtual reality has the potential to recreate cultural experiences by transporting users to different places and times. Virtual museums are an important platform for cultural transfer of VR technology because they make historical and cultural artifacts accessible in a virtual environment and offer users an interactive experience. The role of virtual museums developed with virtual reality (VR) in cultural transfer is very important. The advantages of virtual museums developed with virtual reality (VR) in cultural transfer are as follows:

Enhanced Experiences: Virtual reality can enhance cultural experiences with additional content such as sound effects, guidance, and interactive elements. For example, audio guides or documentaries that explain the historical and cultural context of a work can deepen users' experience.

Ease of Access: Virtual reality technology makes it easier for users to access museums and cultural heritage around the world, bypassing geographical and physical limitations. This provides a great advantage for people living in regions where cultural artifacts are difficult to access.

Interactive Experiences: Virtual reality allows users to interact with cultural works rather than being passive spectators (Lanier, 2018). Users can examine the works up close, rotate them in three dimensions, and even interact with some of them. This makes museum visits more immersive and personal.

Education and Learning: Virtual reality can make the learning process more effective. Students can experience historical events and cultural artifacts in real time, which makes learning more effective and unforgettable (Ulusoy, 2010).

Preservation: Virtual museums can play an important role in situations where fragile or rare artifacts are difficult to physically display. Virtual reality can help digitally preserve cultural heritage and present it to wide audiences.

Augmented Reality and Use in Virtual Museums

Augmented reality is a technology that allows additional computer-generated information to be added to a real-world environment. In visual communication, AR technology is used in various fields such as advertising, education, arts and entertainment. Augmented reality (AR) is considered an effective tool for cultural transmission. Virtual museums have the potential for AR technology to revitalize cultural heritage and offer interactive experiences to visitors. While virtual museums developed with augmented reality technology play an important role in cultural transfer, these platforms create the following values:

Revitalizing Cultural Heritage: AR technology allows visitors to virtually visualize content around artifacts while being in a physical museum. For example, if a visitor is viewing an ancient artifact, AR technology can visually explain the historical or architectural context of that artifact.

Interactive Experiences: AR provides visitors with interactive experiences. Using the AR application, visitors can examine the works closely, rotate them, interact with them, and even examine the details of some works more closely (Ulusoy, 2010). This allows visitors to actively explore cultural heritage, rather than being a passive spectator.

Education and Learning: AR technology can make the learning process more effective. Visitors can learn more in-depth historical and cultural information through AR content around the works. This makes learning more interesting and effective.

Ease of Access: Virtual museums can increase access to cultural heritage through the use of AR technology. Visitors can visit museums around the world, overcoming geographical and physical barriers. This allows cultural heritage to reach a wider audience.

Preservation of Cultural Heritage: AR technology plays an important role in situations where fragile or rare artifacts are difficult to physically display. Virtual museums can digitally preserve such works and present them to visitors, thus ensuring the preservation and sharing of cultural heritage (Önder, Abacı and Kamaraj, 2009).

Augmented Reality (AR) technology plays an important role in preserving, discovering and sharing historical and cultural heritage through cultural transfer and virtual museums (Bayram, 2013). While this technology provides visitors with interactive and in-depth cultural experiences, it also contributes to the transfer of cultural heritage to future generations.

Holograms Technology Use in Virtual Museums

Holograms are visual effects created by creating 3D images in real time. In visual communication, holograms are used for impressive visual presentations, product promotions and stage performances. Holograms are an interesting technology used to provide visual and interactive experiences in virtual museums. Virtual museums allow for the virtual display of rare or fragile artifacts through hologram technology. This allows visitors to experience these works in an immersive way when they cannot physically reach them. Holograms offer visitors the opportunity to make interactive presentations (Kaplanoğlu, 2020). Visitors can examine the works in 360 degrees through holograms, see the details more closely and even interact with some of them. Holograms provide enriched experiences by combining them with additional content such as sound effects, guidance and interactive elements. For example, a holographic guidance system can provide visitors with detailed information about artifacts and lead them through the museum, providing a deeper understanding.

In virtual museums, holograms can also be used for live performances (Lanier, 2018). For example, a hologram of a famous historical figure can offer visitors the opportunity to more closely experience the atmosphere and lifestyle of that period. Holograms offer virtual guidance to visitors. Visitors can tour the museum and get information about the works accompanied by a hologram guide. When used in virtual museums, holograms provide visitors with immersive and interactive experiences. This technology brings many advantages, such as exhibiting rare works, providing enriched experiences and presenting live performances. As a result, holograms make a significant contribution to virtual museums' efforts to preserve and share cultural heritage (Sherman and Craig, 2018). The general scope of the educational roles of hologram-based virtual museums in cultural transmission is as follows:

- Exhibition of rare and fragile works
- Interactive presentations
- Enriched experiences
- Live performances
- Virtual guidance

The Importance of Museums in Cultural Transfer

Museums play an important role in cultural transmission. Museums are an important tool for preserving history and cultural heritage. Exhibiting and preserving rare works, works of art, historical documents and other important cultural artifacts ensures the transfer of this heritage to future generations. It offers visitors the opportunity to learn about history, art, science and culture (Önder, Abacı and Kamaraj, 2009). In addition to the works on display, museums provide a platform for education and knowledge sharing through activities such as interactive exhibitions, documentary screenings, workshops and guided tours.

Museums strengthen the identity of a society by preserving the cultural heritage, which is an important part of a society's identity and history. Through museums, visitors discover their cultural roots and strengthen their sense of belonging to their society. They provide a platform for the promotion and support of arts and culture. It provides a platform for museums to exhibit works of art, promote artists and create new works of art.

Museums make an economic contribution by increasing the tourism attraction of a country or city. Museums visited by local people and tourists provide economic and social benefits to the region. It encourages the coming together and celebration of different cultures and communities (Kaplıanođlu, 2020). Museums, where different ethnic groups, languages, traditions and beliefs come together, celebrate cultural diversity and contribute to social harmony. As a result, museums play a central role in cultural transmission (Lanier, 2018). They fulfill many important functions such as preserving history and heritage, education and information sharing, strengthening the identity of the society, promotion of art and culture, tourism and economic contribution, and celebration of cultural diversity.

Virtual Museums

Virtual museums are an important resource and valuable for cultural transfer and society. Virtual museums provide everyone with access to cultural heritage by overcoming geographical and physical barriers. People can virtually access museums around the world, making cultural heritage available to a wider audience. It allows the digital preservation and display of rare and fragile works. This is an important step for the protection of historical and cultural heritage because physically exhibiting these works can be risky (Kaplıanođlu, 2020). Virtual museums are cultural platforms that can be accessed via the internet and digital technologies, contain digital objects and information, provide interactive communication with visitors and offer worldwide access without the need for any physical location. These platforms offer users the opportunity to explore history, art and cultural heritage by bringing the museum experience to the digital environment. The main purpose of virtual museums is to preserve, promote and make accessible cultural heritage. In this context, transferring the works in the digital environment and providing special services to various user groups increases the importance and value of virtual museums. Őik stated in Glosset that what will reveal the importance and value of a virtual museum is not the originality of the works inside, but the transfer of the existing works to the digital environment by using them in a way to produce new information. In this respect, virtual museums are of great importance in terms of digitalizing cultural heritage and presenting it interactively with new generation communication technologies (Quoted by: Lanier, 2018).

The Educational Role of Virtual Museums

In contemporary societies, museums operate to provide education to large audiences. To achieve this goal, museums use public relations and communication strategies. One of these communication strategies is virtual museums (Sherman and Craig, 2018). Virtual museums can make significant contributions to museum education by using them in education. According to Tepecik, virtual museums are an important step in fulfilling the educational mission of museums. Saraç also stated that virtual museums, created by collaborating with other museums and schools and maintaining constant communication, can gain an important place in the information age society. Although they do not completely replace real museums, virtual museums provide information in terms of general culture. Museum education relationships can be established through electronic communication networks established with all schools across the country. In virtual museum trips, as in real museum visits, there are preparations to be made and precautions to be taken before, during and after the trip (Kaplıanođlu, 2020). Making these preparations will increase the efficiency of the visit and ensure that the gains are gained in the most accurate and effective way.

Results



Figure 1: Topkapı Palace Bâbüsselam Gate

Sign: 360 degree photographs of Bâbüsselam Gate and courtyard

Signifier: Towers with conical roofs on both sides of the Bâbüssemal entrance gate, the medieval castle-style structure of the upper part of the gate, and a forested courtyard

Signified: The powerful and ostentatious structure of Ottoman architecture, a large courtyard that would be suitable for large celebrations and ceremonies, including natural beauties

Narrative: The General Directorate of Cultural Heritage and Museums, on the 3D Spaces Digital website of Topkapı Palace, enables users to navigate between photos using the right and left arrow keys, thus obtaining a view of the door from all angles. Users can explore the architectural features, decorations, and surroundings of the door. The design of the entrance gate in castle style, along with the two tower structures and tower observation windows next to it, encode the sense of security and control in this area. It is understood that passage through this gate is only possible with permission and security clearance. Additionally, the conical roof structures resembling minarets added to the castle-like design of the gate, while emphasizing Islamic style in Ottoman architecture, demonstrate a synthesis of Eastern and Western influences.

The adaptation of the Bâbüssemal Gate in Topkapı Palace operates in accordance with Saussure's theory of sign, signifier, and signified. The photographs (signs) are tools that enable users to experience the Bâbüssemal Gate. The gate itself and its surroundings (signified) are the images presented through the photographs. However, there is no progression or interaction between the photos; thus, users see the gate from a fixed area at a certain point. This situation represents the relationship between the sign, signifier, and signified, presenting users with a specific section of the virtual space they experience.



Figure 2: Topkapı Palace Inner Garden Entrance Area

Sign: 360 degree photographs of the interior garden entrance area

Signifier: Garden area and tower image with a space adorned with marble and wood, embellished with gold gilding.

Signified: The Inner Garden boasts a lush, flower-filled, and expansive area. Beyond the garden stands the Justice Tower with its conical roof structure, along with the grand Divan-ı Hümayun Gate adorned with symbols of wealth like golden gilding.

Narrative: These photographs on the General Directorate of Cultural Heritage and Museums, Topkapı Palace 3D Spaces Digital website offer users a view of the inner garden entrance area from every angle. With the right and left arrow direction keys, users examine every area, including the ceiling. The photographs convey the architectural details, decorations and atmosphere of the interior garden entrance area. The second courtyard, the Inner Garden, appears to be an elegant and spacious section set in a large green and flowery area. The Justice Tower can be seen beyond the garden. Justice Tower is the tallest structure of Topkapı Palace. This structure reflects the perception that 'Justice has a place above our heads in our state'. Divân-ı Hümayun, on the other hand, is reflected with its predominance of gold embroidery and its ostentatious structure, in which the divan, that is, the Council of Ministers, was considered superior.

When examined within the framework of Saussure's theory of sign, signifier, and signified, the Inner Courtyard Entrance Area of Topkapı Palace represents the relationship between the sign and the signified. The photographs (signs) present various views of the inner courtyard entrance area. The inner courtyard entrance area and its surroundings (signified) are perceived and presented to users through these photographs. However, there is no progression or interaction between the photographs, so users see the inner courtyard entrance area from a fixed area at a certain point. This situation represents the relationship between the sign, signifier, and signified, offering users a specific segment of the virtual space they experience.



Figure 3: Topkapı Palace Divan-ı Hümâyün

Sign: 360 degree photographs of the Divan-ı Hümâyün.

Signifier: Interiors of the two sections of the Divan-ı Hümâyün, the main hall, divans, sultan window, barbecue and waiting room, domed ceiling structure

Signified: The large main hall, the barbecue in the middle of the main hall and the cedars around it, the sultan window that sees the outside but not the inside, the waiting room, and its ostentatious structure with gold embroidery in its two interior spaces.

Narrative: Domed structures are generally designed for gathering and meeting structures. This section is a room where the highest level decisions of the state in the Ottoman Empire were taken, council meetings were held and the sultan carried out government affairs. The main hall of the Divan-ı Hümâyün, which consists of two parts, the barbecue, which was the heating tool of that period, and the couches around it represent the area where the meetings were held. The fact that the place is large and the barbecue is in this area indicates that long-term meetings are held in this section. The waiting area is designed as a smaller area, so it can be seen as a place for short-term stay. These photographs visually present the internal and external details of the Divân-ı Hümâyün to users. On the General Directorate of Cultural Heritage and Museums, Topkapı Palace 3D Spaces Digital Website, users can switch between photographs with the right and left arrow keys and examine the view of the Divân-ı Hümâyün from different angles. Divân-ı Hümâyün is an important part of Topkapı Palace, the political and administrative center of the Ottoman Empire. Detailed modeling of the room is not included in the virtual museum modeling. Topkapı Palace Divân-ı Hümâyün presents different views of the Divân-ı Hümâyün through photographs (signs), within Saussure's theory of sign, signifier and signified. The elements shown, such as the history and importance of the Divân-ı Hümâyün, are not directly conveyed through photographs, but the photographs reflect the atmosphere and details of this important room. This project allows users to discover Divân-ı Hümâyün and experience this important historical place in a virtual environment.



Figure 4: Topkapı Palace Bâbüssaâde Gate and Bâbüssaâde Ceremonial Square.

Sign: 360 degree photographs of Bâbüssaâde Gate and Bâbüssaâde Ceremonial Square

Signifier: Bâbüssaâde Gate, canopy, ceremony square, garden

Signified: The magnificent Bâbüssaâde Gate protected by a canopy, with a large garden in front of the gate and a ceremony area intertwined with nature

Narrative: In Topkapı Palace, Bâbüssaâde is an important gate during the Ottoman Empire period, and it refers to the area surrounding this gate. Bâbüssaâde is one of the gates located within the palace that opens to the outside.

Additionally, the area where this gate opens is also called Bâbüssaâde Ceremony Square. This square is where the palace's official ceremonies are held and where important state guests are welcomed. These photographs visually present users with architectural details, decorations, and the overall atmosphere of this area. Users of the General Directorate of Cultural Heritage and Museums' Topkapı Palace 3D Spaces Digital Website navigate between photos using the right and left arrow keys to examine the square from different angles. The virtual reality project for Topkapı Palace Bâbüssaâde and Bâbüssaâde Ceremony Square operates in accordance with Saussure's theory of sign, signifier, and signified. The photographs (signs) offer users views of Bâbüssaâde and the square from different angles. These areas and their surroundings (signified) are perceived and presented to users through the photographs. However, there is no progression or interaction between the photographs, so users see the square from a fixed area at a certain point. This situation represents the relationship between the sign, signifier, and signified, offering users a specific segment of the virtual space they experience.



Figure 5: Topkapı Palace Privy Room Sacred Relics Room

Sign: 360 degree photographs of the Privy Room Sacred Relics Room

Signifier: Private room, tiles, fountain. Sacred Relics room, columns, courtyard,

Signified: The magnificent Iznik and 16th century best tile works on the walls of the Privy Room, the fountain that provides water sound and humidification to the environment, the strong column structures at the entrance of the Sacred Relics Room and the courtyard with an open ceiling design

Narrative: Through the General Directorate of Cultural Heritage and Museums' Topkapı Palace 3D Spaces Digital Website, these photographs visually present users with the interior of the Sacred Chamber and the sacred relics it houses. The Sacred Chamber holds sacred relics that are an important part of the Ottoman Empire's religious and cultural heritage. The strong column structure at the entrance and the open courtyard structure synthesize grandeur and sanctity. The Sacred Chamber, being the private quarters of the Sultan, exudes splendor with its magnificent tiles while providing a soothing ambiance with the central fountain and the sound of running water. Users navigate between photos using the right and left arrow keys to examine the room from every angle and explore other details within it. When examined within the framework of Saussure's theory of sign, signifier, and signified, the virtual reality project for the Topkapı Palace Sacred Chamber and the Chamber of Sacred Relics presents the interior of the Sacred Chamber and the sacred relics it houses through the photographs (signs). These sacred relics and other details within the chamber (signified) are perceived and presented to users through the photographs. However, there is no progression or interaction between the photographs, so users see the interior of the Sacred Chamber from a fixed area at a certain point. This situation represents the relationship between the sign, signifier, and signified, offering users a specific segment of the virtual space they experience.



Figure 6: Topkapı Palace Arzhane

Sign: 360 degree photos of Arzhane section

Signifier: Tile-covered walls, glass display cases

Signified: The magnificent Iznik and 16th century tile works on the walls of Arzhane, the holy relics protected by glass display cases.

Narrative: Arzhane is the place where those who came to meet the sultan were received. The room, whose walls were covered with 16th and 18th century tiles and made ostentatious, houses the holy relics of the Prophet Muhammad. It is also known that Arzhane was used as a place where the grand vizier and palace dignitaries gathered to congratulate on important days such as the accession and the Hirka-i Saadet visit in the middle of Ramadan. Through the General Directorate of Cultural Heritage and Museums, Topkapı Palace 3D Spaces Digital Website, the user observes the atmosphere, architecture and interior details of Topkapı Palace Arzhane in the virtual environment. The user explores every area, including the ceiling, but remains at a fixed point as there is no interaction such as moving forward or walking. This virtual reality project for Topkapı Palace Arzhane is in line with Saussure's theory of sign, signifier, signified because users experience the interiors of Topkapı Palace Arzhane as the signified using photographs as signs. While photos allow users to take a virtual tour of these locations, there is no progression or interaction between the photos, meaning there is a fixed point within the photos. This represents a specific slice of the virtual space experienced by users, connecting the relationship between sign, signifier and signified.

Conclusion and Recommendations

Examining different rooms and areas of Topkapı Palace with a virtual reality project increases access to historical and cultural heritage and gives users the opportunity to closely explore these important places through data, even if they are not physically there. Such projects are also considered as a journey to the past in a virtual environment, as users have the chance to get to know and understand the historical and cultural heritage more closely. Museums, where cultural heritage items are preserved and exhibited, emerged as people accumulated valuable items and developed over time, taking their current form. In addition to acquiring and preserving artifacts, museums also aim to educate society and individuals. Today, the number and diversity of museums has increased, and works are collected for different purposes and classified under various headings. Virtual museums emerged by transferring physical museum collections to the virtual environment and presenting them online. In these museums, collections in physical museums are monitored and works are examined even when it is not possible to go to the museum. Virtual museums are used to raise awareness about cultural heritage and different cultures, to concretize abstract information and to make people aware of changes by presenting the benefits of museums used in the learning process in the classroom.

In the findings section, different rooms and areas of Topkapı Palace, which is a 360-degree virtual reality project, were analyzed within the framework of Ferdinand de Saussure's theory of sign, signifier and signified. The virtual reality project of each room or area gave users the opportunity to visually explore these historical places. However, the modeling was done using the limited features of virtual reality technology. While a 360-degree museum perception is created with the photographs used, the areas shown are one-dimensional and the relevant rooms and areas can be seen from a central point with left and right movements. Saussure's theory of sign, signifier and signified is important in the context of the use of photographs in these projects and the representation of spaces through these photographs. Photos act as indicators and offer users a view of a particular space or area from different angles. What is shown includes elements such as the physical existence of these places and their historical and cultural importance. While the virtual reality project of each room or area represents a certain section to the users, it also offers a visual experience within the framework of Saussure's theory of sign, signifier and signified. However, there is no progression or interaction between photos, so users see locations from an area fixed at a particular point.

Virtual museum applications contribute to the teaching process in different ways. For example, by using the examination method via the internet, students' active participation in the learning process is ensured and in this way, the effectiveness of the teaching process can be increased. In this study, firstly, theoretical information was given about the importance of museums and virtual museums, and then, in line with the determined achievements, the representation and educational role of Ottoman works in virtual museums were examined by using Ferdinand de Saussure's theory of sign, signifier and signified in virtual museums via the internet. Semiotic analysis based on this examination method is presented. With the fact that virtual museums solve the problem of not being able to physically reach the museum, it is thought that the use of the semiotic analysis method in the teaching process will enrich the details and content learned, and it is seen that cultural transfer occurs.

In today's world where visual communication is dominant, videos are undoubtedly more impressive and at the forefront of perception management. In new 360-degree virtual reality museum projects, visuality should be prioritized and should be supported with short videos in this context. In the studies carried out, these deficiencies were identified by using different applications of the semiotic study method and T.R. It would be beneficial to present it to the officials of the Ministry of Culture and Tourism.

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