

ICT기반 문화복지의 방향성 제시: 문화예술체험관 중심으로

임 영 준¹ · 이 영 숙^{2*}¹동국대학교 일반대학원 연극학과 박사과정²동국대학교 영상문화콘텐츠연구원

A Proposal of the Direction of Cultural Welfare Based on ICT: Focusing on Experience Center for Arts and Culture

Young-June Lim¹ · Young-Suk Lee^{2*}¹Ph. D Student, Theatrical Production, Dongguk University, Seoul Korea^{2*}Institute of Image and Cultural Contents, Dongguk University, Seoul Korea

[요 약]

본 연구는 ICT를 토대로 문화복지에 대한 방향성을 제시하였다. 이를 위하여 정부정책의 방향과 문화복지 서비스 현황에 대해 살펴보고 국내외 문화복지 서비스 사례에 관련하여 사용자 체험을 중심으로 하는 박물관과 미술관을 대상으로 분석하였다. 그 결과 미술관에 비해 박물관은 미디어환경에 따라 많은 변화가 모색되었다. 세부적으로 미디어 1.0시대에는 실제 박물관을 통해 관람되었다면 미디어 2.0시대에는 가상박물관이 나타났다. 이것은 미디어 환경, 대상(전시물), 접근성, 소모성 및 정보성에 있어서 많은 차이가 있음을 알 수 있었다. 끝으로 이를 통해 한국형 ICT 문화복지 서비스 환경변화요소를 제안하였다. 향후, 문화소외계층에게 문화향유에 대한 문화복지 서비스의 확대가능성에 대한 지속적인 연구가 필요하다고 사료된다.

[Abstract]

This study presented the direction of cultural welfare based on ICT. For this purpose, it examined the direction of government policies and the status of cultural welfare services and it analyzed art galleries and museums focusing on experiences of cultural welfare services in a home and abroad. As a result, the museum has many changes depending on the media environment, unlike art gallery. In the age of media 1.0, the audience has experienced in real museums. As time goes by, in the age of media 2.0, the customer has opportunity to experience in virtual museums. It seems that there are many differences factor of a media environment, target (exhibits), accessibility, consumption and information. Finally, this study suggested the environmental change factors of Korean ICT cultural welfare service through this. In the future, it will be necessary to continue research on the possibility of expanding cultural welfare services for cultural enjoyment to the underprivileged.

색인어 : 문화복지, 문화소외계층, ICT, 가상투어, 가상박물관

Key word : Cultural Welfare, Cultural Underprivileged People, ICT, VT(Virtual Tour), VM(Virtual Museum)

<http://dx.doi.org/10.9728/dcs.2017.18.8.1567>



This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Received 08 December 2017; Revised 20 December 2017

Accepted 25 December 2017

*Corresponding Author; Young-Suk Lee

Tel: +82-10-8313-9825

E-mail: tonacoco@dongguk.edu

I . Introduction

With the advent of the five-day workweek in 2004, people have increased interest in culture and leisure. As time goes by, they were recognized as the needs for cultural welfare [1]. In particular, as the public's interest in the quality of life has increased, leisure culture in the center of the family and enjoyment of culture has increased. Cultural enjoyment is not fair to all members of society, and cultural opportunities are given along with discrimination in income, education, age, sex, and residence area. In other words, member of vulnerable social groups in the socially and culturally are excluded or exempt from cultural enjoyment due to a variety of reasons, including income and lack of awareness [2].

According to the "2016 The Survey of Cultural Enjoyment[3]" published by the Ministry of Culture, Sports and Tourism, 31.9% of respondents said that "The cost is high" and 26.2% of them answered "It is lack of time, respectively, in terms of the reasons for the difficulty of artistic and cultural activities. In particular, the view rate of the films was the seven times higher than that of the performing arts (theatre, musical, etc.) at 73.3%. Of course, it can be seen that the TV and PC supply is high and the movie theatres are more familiar and distributed than the theatres. The viewing rate of each region was relatively low compared to that of large cities and small cities, and the viewing age of 60 and over shows a very low rate compared to those in their 20s and 30s.

In addition, according to the "2016 Survey on National Leisure Activity[4]", the first reason for the dissatisfaction of their leisure activities was "lack of time (51.5%)" and "economic burden (33.4%)" respectively. Each report published by the Ministry of Culture, Sports and Tourism is different in purpose and intention, but as a result, assuming that activity for promoting cultural activities is included in leisure activities, two key reasons for not receiving cultural welfare benefits are 'time' and 'cost'.

In this global situation, many cultural underprivileged classes can benefit from cultural welfare if ICT and culture and arts are combined. All members of the society will have benefit equally by realizing ICT welfare. In general, the concept of welfare needs to explore various approaches depending on time, viewpoint, and subject. Currently, the platform has been developed rapidly thanks to the development of science and technology, and according to KT Economic Research Institute, it has reported that market of virtual reality (VR) and augmented reality (AR) with artificial intelligence(AI) will reach 170 trillion won in 2020 [7]. This will give an opportunity to enjoy culture to underprivileged people and give the ICT market an opportunity to expand new contents.

Therefore, this study will look at the concept of cultural welfare, the direction of related government policy, and the status of cultural welfare services. Following this, it will be analyzed focusing on experiences of domestic and overseas ICT - based cultural welfare services. Finally, it will suggest changes in the environment of cultural welfare to implement the Korean ICT cultural welfare service.

II . Literature Review

2-1 Concept of cultural welfare

The concept of cultural welfare can be divided into a sub-domain of social welfare and an independent domain of cultural policy [5]. Cultural welfare is recognized as a high level of welfare that the welfare government must reach in basic welfare such as food, clothing, and shelter and health [6]. Cultural welfare in the field of culture and art can be defined by national and social will with an effort to promote creativity required by culture and society and to improve the quality of life of an individual by cultivating cultural sensitivity[7]. In a narrow sense, it is the prevention and treatment of the cultural weak person that lacks cultural enjoyment and experience. Also, in a broad sense, it can be defined as a public service that improves the quality of life of the people by improving the cultural environment according to the cultural needs of all the people.

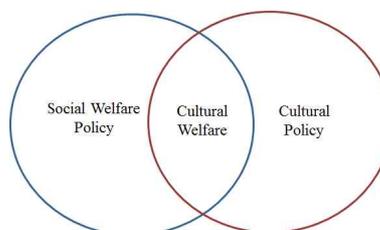


Fig. 1. Area of Cultural Welfare

It is said that social welfare is for the fulfillment of material and economic needs, and cultural welfare is judged for the fulfillment of mental and cultural needs. Ultimately, it is said that the welfare of the two fields can be linked with each other, both of them could improve the quality of life of the people [8]. If the concept of cultural welfare include the socially vulnerable, in order to enhance the cultural enjoyment and participation opportunities of all citizens, and it is considered as a public institution of both public and private to improve the quality of life by developing cultural sensitivity and creativity.

Moreover, cultural welfare could be extended not only to the socially vulnerable but also to the general public who have a limit of cultural enjoyment and participation due to economic, physical and social constraints. If the detailed targets are separated, they can be divided into those who have experience of cultural welfare benefits and those who do not, regardless of age. In terms of policy, the intersection of social welfare policy and cultural policy becomes the domain of cultural welfare [9].

2-2 Cultural welfare policy

The cultural welfare policy that Korea is implementing in the Ministry of Culture, Sports and Tourism can be roughly classified into two categories [10]. The first is the establishment and operation of various cultural infrastructure facilities. It is to establish and run theatres, museums, art galleries, art centre and libraries to make it easy to access the culture and arts in the lives of the general public. The second is providing cultural arts programs and services to give people an opportunity to enjoy, participate and experience a culture. In particular, this is a project that targets cultural underprivileged people who do not have the opportunity to enjoy culture due to economic, geographical and social constraints. This is a representative example of the 'Project Sharing the Culture' run by the Arts Council Korea with budgets of a lottery fund as well.

Most cultural welfare services are targeted primarily for those who are culturally marginalized. Under Article 15-3 of the 「Culture and Arts Promotion Act」, cultural underprivileged people is the cultural marginalized class who can not enjoy culture and arts due to economic, social and geographical restrictions. As shown in Table 1 below, it can be divided into a cultural neglected class[11].

Table 1. Classification of cultural underprivileged people

| Object | Example(class) |
|---------------------------------------|---|
| Economically underprivileged people | Beneficiary of national basic livelihood, lower income family, resident of rental housing, etc |
| Socially underprivileged people | People with disabilities, old people, nursery schools, social welfare facility users, pediatric ward patients, foreign workers, etc |
| Geographically underprivileged people | People at local, the coastal and insular areas, mountainous territory, local industrial complex, etc |
| Special underprivileged people | Prisoners in a correctional institution, soldiers, settlers, etc. |

According to the definition of cultural underprivileged people, cultural welfare projects implemented in Korea can be classified as Table 2. Of course, there are welfare services for all Koreans,

not cultural marginalized people. In addition, cultural welfare services based on ICT in Korea are examples of 'Sac on Screen', which allows visitors to watch performances on the screen. However, this service is not a government-led cultural welfare project but rather a project that the Seoul Arts Center conducts arbitrarily.

Table 2. Classification of domestic cultural welfare service subject

| Project Title | Support Ways | Goals |
|-------------------------------------|----------------------------|--|
| Cultural Vouchers | Cost support | To promote opportunities to view arts and culture |
| Exciting Art Tour | Tour performance | To clear cultural polarization |
| Cultural Sympathy | Tour performance | To promote a local cultural enjoyment and development |
| Supply of Sejong Books | Book distribution | To enhance a cultural right |
| Creating a Living Culture Community | Creative experience | To formate local resident community |
| Cultural Enrichment Day | Cost reduction and support | To provide people with an opportunity to enjoy culture in daily life |

The government-led cultural welfare projects have various problems following as[12]. Cultural welfare projects have problems in terms of planning step, enforcement step, and performance management. First of all, the plan step is that the definition of cultural marginalized class is provided by law, but the target of policy demand is unclear. In the second step of implementation, cultural welfare services can be divided into audience-centered support projects and supplier - centered support projects. The former usually leads to a "culture consumption sector lean towards" and "a lack of mediator for cultural welfare" in the way of paying cash and in kind. Moreover, it is said that the latter has too complicated and inefficient system to provide programs to the underprivileged people, such as performance, exhibition and arts education. Finally, in the case of the problem of performance management, there are limitations in the development of performance indicators and impact indicators. Also, there is a question whether the project evaluation index itself is appropriate as evaluation data for cultural welfare projects because of the intangible feature that the achievements of cultural welfare policy have.

2-3 A form change of experience center for arts and culture

The basic concept of a museum has changed a lot.

Traditionally, the function of the museum is focused on the collection and preservation of artifact with the display of artifact. However, museums in modern society are becoming more and more important as public educational institutions. Furthermore, as the educational functions of museums become more and more emphasized, the general public is expanding to develop linkage education of school curriculum by going beyond the scope of cultural education institutions[13].

According to the ICOM, International Council of Museums “A museum is a non-profit making permanent institution in the service of society and of its development, open to the public, which acquires, conserves, researches, communicates and exhibits, for purposes of study, education and enjoyment, the tangible and intangible evidence of people and their environment”[14]. Many people have a tendency to viewing museums as a boring place to collect historical and cultural data. In addition, it seems that it treats only the thing of the old, and the museum is considered as the place of the past which it is old. But, according to the ICOM, a museum is not both a place for collecting and a place for dealing with the past. People can experience various fields related to human civilization such as art, music, history, natural history, science, and technology in museums, and have a constant dialogue with past, present and future. Based on the definition of the International Council of Museums, a considerable number of cultural spaces come into the realm of the museum. The following cultural spaces are included in the area of museums [15]. There are existing types of various museums following as. For example, there are History Museums and Archive, Art Museums and Galleries, Natural History Museums, Cultural Heritage Museums, Science and Technology Museums, Children's and Youth Museums, Zoos, Aquariums, Botanical Garden, Nature Centers, Planetariums, Memorials, Historic Homes. According to the 「Article 2 (2) of the Museum and Art Museums Promotion Act」, art museum means facilities for exhibitions and training, collecting, managing, preserving, researching and researching materials related to arts, especially paintings, sculptures, crafts, architecture, photographs, among museums, in order to contribute to the development of culture and arts. In general, art galleries and art museums can be different according to purpose to distinguish whether it is possible to buy and sell works. But this study defines them as the same function. Also, there are existing types of various galleries following as. Depending on the organizer, there are art museums of national, municipal, provincial and private cultural foundations, art museums in university, and other small private art museums.

Therefore, it is necessary to provide an opportunity to experience the museum and art galleries even if cultural underprivileged people do not actually visit the museum.

III. The Case Analysis of Cultural Welfare Service

3-1 Overseas case

Since 1995, the European Union (EU) has recognized the importance of cultural heritage education and has been making educational contents including science, technology and history. In particular, the Virtual Museum can contribute to the enhancement of ICT literacy and is classified as one of the key technologies of the 21st century. A virtual museum is a permanent or temporary digital production. It has been developed to educate the public by digitally preserving, studying, communicating and displaying tangible and intangible artifacts and environments in the field of cultural heritage[16]. In the technical sense, the term VM can encompass various types of digital content, from storage of multimedia content to virtual reality (VR) and 3D reconstruction. In particular, there have already been many technical efforts for 3D of various cultural heritages[17]. Although the use of VR is widespread in specific areas such as industry, medicine, and training, it has been gained positive responses in the field of cultural heritage for recent years.

(Fig. 2) is moving into the 3D space based on the movement of the body as if it were actually exploring the virtual tomb. This is a virtual tomb of the Etruscan-Gregorian section at the Vatican Museums, where a user can study by listening to the voices and stories of people related a virtual tomb when user arrive near the specific relics. In particular, the user can follow the actual map of the tomb attached to the floor and locate the virtual tomb by displaying the hotspot [18].



Fig. 2. The virtual tomb guidance system (left) and 3D reconstructed ancient pottery (upper right) original (lower right)

In addition, virtual reality (VR) in the field of preservation and restoration can reconstruct and protect art works or cultural properties that have been destroyed or damaged by the time [19]. This can be used as an aid for the restoration work and can restore the damaged part virtually without affecting the original exhibit. Moreover, VR is more often used as an educational or storytelling tool because it is mainly conveyed by sensory feedback images and sounds [20]. In addition, hologram technology is able to reproduce 360-degree stereoscopic images of objects it is regarded as the best technology to realize stereoscopic images without glasses like VR[21]. The Smithsonian National Museum of Natural History, which opened in 1910, contains more than 100 million the materials of animals, plants and mineral from the birth of the earth to the present day. Since it is the size of 18 football stadiums, it will take a lot of time to view all the exhibits. However, this museum has an environment that audience can be easily accessible to virtual tour in online[22].

If you actually enter VT (Virtual Tour) (Fig. 3), there are various devices. First, there is a controller at the bottom of the screen (it can be moved by clicking with the mouse regardless of the controller). In particular, when a user looks at the 3D map, the user can see a circular circle with a small dot shape and if the user clicks on it, the display will enlarge and move to a screen that user can see it clearly. It is possible to visit the museum directly and see the time and place unrestrictedly more easily and clearly on the screen without competition with the spectators of many visitors. It is easy to use portable equipment (smart phone, etc.) due to the fact that it is easy to view on the homepage. In addition, as shown in Figure 3, it is possible to view VR (Virtual Reality) glasses in the VT(Virtual Tour) homepage, and it will be a more lively for a museum. Of course, there is also a way to easily make VR glasses with thick paper, so it does not need to buy glasses for VR (Virtual Reality) of Virtual Tour.

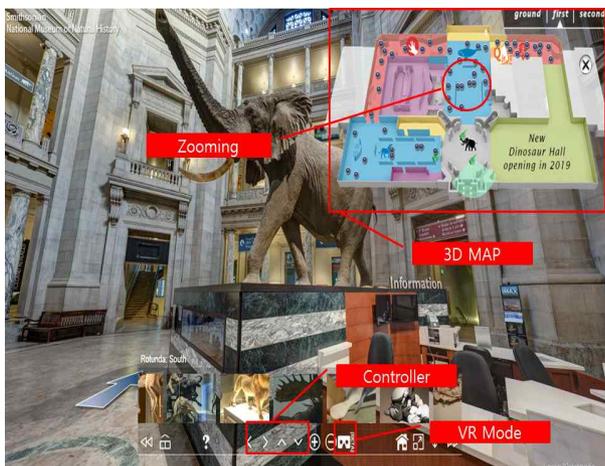


Fig. 3. Smithsonian Virtual Tour

The National Gallery in the UK has 18 rooms made up of virtual tours [23]. The National Gallery's user interface(UI) is similar to that of a general virtual museum and there is a list of artworks which can be navigated to the map as well. If a user wants more detailed information about the artwork, the user can easily find information about the work in the National Gallery by clicking. In addition, audience can easily view more than 1,200 international museums and galleries in 70 countries online through the smartphone Google Apps & Culture. It is not simple viewing but it is composed of detailed location and description of high-resolution exhibits and even the above-mentioned VT (Virtual Tour) format. Of course, 360-degree screen and VR screen can be seen. Google Art Project provides users with a platform for art appreciation and learning. There is the information of exhibits and it can be translated into other languages such as Korean, English, and has all the functions of the virtual museum mentioned above, and all of them can be controlled freely from the mobile state. The user can also see art work in chronological, thematic, and event-specific details and find out exactly where it is from any gallery in the real world. Even if It is a virtual museum or gallery, it is an application that can take advantage of the benefits associated with the Internet.

Table 3. Service method of overseas cultural welfare

| Category | Feature |
|--|---|
| Virtual Museum (Vatican Museums, Smithsonian, National Gallery') | Virtual Tour with VR glasses Program to access via mobile devices Listening to the voices and stories related to contents |
| Application (Google) | Virtual Tour with VR mode 1,200 international museums and galleries in 70 countries Seeing artwork in chronological, thematic, and event-specific details |

3-2 Domestic Cases

In the case of domestic examples, there is the National Museum of Korea and the National Museum of Modern and Contemporary Art. The National Museum of Korea is operated by Naver (www.naver.com) as an internet virtual museum. The virtual museum provides virtual experience services like a personal visit to museums on the Internet through the selection of artifacts from the National Museum of Korea and digitization of artefact information [24].

In particular, whenever a user goes into each section, the information is exposed to a user and the user can move into other areas by clicking lists depending on a theme without a map. This

is a useful function comparing with overseas cases. The reason is the fact that even if the researcher speaks English, the researcher has not been able to know exactly what location or subject at the virtual museum of the overseas. However, it seems that the National Museum made to be able to act as a thematic list for this purpose.

In the case of art gallery, National Museum of Modern and Contemporary Art is similar to the National Museum of Korea, however, its quality is lower than that of the National Museum of Korea and it is difficult to find examples of a virtual tour in art galleries. But, in terms of a private art gallery, there is EAZEL [25], a company that shoot actual art galleries as VR(Virtual Reality) and store them in an archive format, has been making VT(Virtual Tour) on private art galleries for a fee. According to the independent curator, Hye-Young Gwak, the hosts of private art galleries do not recognize a necessity of virtual tour like a virtual museums [26].

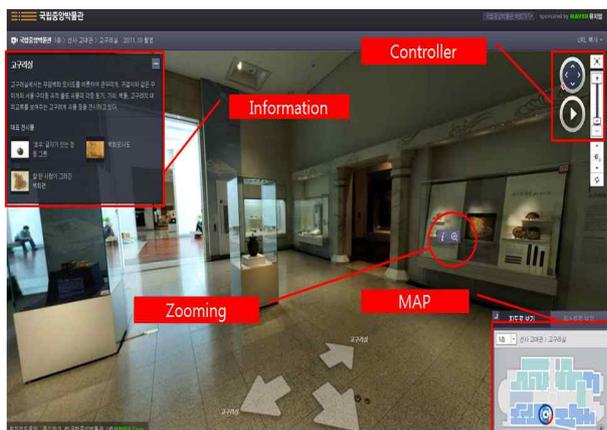


Fig. 4. National Museum of Korea Virtual Tour

She said that the most of the artworks in Korea are used as references for the students who are majoring in the arts, or that they have been used to promote private art galleries for overseas promotions unlike famous artworks for a normal customer[27]. In other words, it can be said that the demand for domestic artwork is used for learning purposes or as a personal reason for private art gallery rather than for beneficiaries of welfare dimension. Currently, EAZEL has 12 private art galleries in Seoul, which have been converted into virtual art galleries and also, they have been archived and an audience can see them on the EAZEL homepage after membership.

Table 4. Service method of domestic cultural welfare

| Category | Feature |
|--------------------------|---|
| National Museum of Korea | Thematic list with the map on the controller |
| Private Gallery | EAZEL, A company that shoot art galleries as VR An archive format |

3-3 Environmental change in cultural welfare

As time goes by, from a real museum into a virtual museum the environmental change of cultural welfare is related to the change of the media environment. To put it another way, the form of the media 1.0 changed to media 1.5 and the media 2.0 environment changed not only in media but also in culture and society [28]. A real museum was in the form of a media 1.0, so that it provided information to the reader or audience unilaterally. Media 1.0 was generally the primary medium for providing information such as TV, radio, and newspapers. At this time, the information was transmitted unilaterally through the media, and the form was accepted by the public passively.

However, with the advent of IT(Information Technology) generation of media 1.5 has changed into a form of search portal service and it played a key role as a primary information form by using not media 1.0 but the Internet. Portal service based on search service has a great influence because of huge information consumption of users. Since the advent of Web 2.0 and media 2.0 has become an interactive environment based on interactive communication. In particular, netizens had various activities such as sharing, providing and reproducing contents using the collective intelligence of netizens thanks to the advent of social media[29]. A museum born in this environment is a virtual museum.

Table 5. Comparison of real and virtual museum

| Category | Real Museum | Virtual Museum | |
|-------------------|--------------------------|-------------------------|----------------------|
| Media environment | The age of the media 1.0 | The Age of Media 2.0 | |
| Target (Exhibit) | Exhibition (Original) | Digital Exhibits | |
| Accessibility | Limited | Easy | |
| Consumption | Long time and costly | No time limit, low cost | |
| Information | Exposure type | Intention of planner | Visitor's preference |
| | Structure | Linear | Non-linear |
| | How to choose | Unilateral | Interactive |
| | Property | Fixed | Selective |
| | Continuity | Temporary | Constantly |

It will analyze the difference between a real museum and virtual museum through comparison of each feature like Table 5. The biggest difference is that the real museum is the original and the virtual museum is the digital exhibit. In particular, there is merit that can be reconstructed by full 3D of an exhibit in a virtual museum although audience can see only partially exhibit due to poor display quality in a real museum. Secondly, customer can be easier to access virtual museums than real museums. In other words, audience can watch for free anytime, anywhere in a virtual museum, however, there are demerits including constraints of cost, space, and time in a real museum. This is a very useful advantage for the culturally marginalized people as mentioned above (Table 1). Thirdly, there is a time consuming, and it takes time to get to the museum and the cost is also wasted due to the fact that the real museum is visited by many visitors.

But, the virtual museum does not have any time constraints and the cost itself. Finally, a real museum is exposed depending on the intention of the planner, and audiences could watch exhibits according to the "Docent program" which explains the exhibit to the visitors in each museum and gallery. In other words, it is linear and there are occasionally questions and answers, however, most of the Docent program, in general, is done in one-sided explanations due to the fact that it has a tight schedule. But, audiences can be visited at the virtual museum freely by clicking or touching the exhibition hall according to the visitor's preference. The virtual museum is non-linear and it is interactive compared to a real museum because it is easy to access not only information of exhibited goods but also other community or blog using SNS with the Internet-enabled environment. Therefore, there are features that are selective, participatory, shared, open and continuous.

IV. The Direction of ICT-based Cultural Welfare Service

So far, domestic and overseas cases have been compared with real museums and virtual museums. Virtual (or digital) museums and art galleries based on ICT should be widely used in arts and culture as well as cultural welfare. The reason is fact that VT(Virtual Tour) has been reported to be an effective method in terms of education [30]. Virtual museums are particularly important in terms of education for a cultural underprivileged people and they should be beneficiaries of cultural welfare due to the fact that user can have a high concentration of the good learning environment systematically. It is more significant for

virtual museum and gallery to have opportunities for new thinking by means of the web using ICT. It seems that this may be beneficial to socially and geographically underprivileged people mentioned in literature review. Therefore, this article proposed the direction of ICT-based cultural welfare service in Korea as follows.

Firstly, it is necessary to supply devices suitable for the proper environment in order to experience Virtual Reality(VR), which is a feature of virtual museums and art galleries. So, it is desirable to build an ICT system that audience can watch by wearing Wearable Devices that can automatically recognize movements, gestures, and voices to enhance interactivity and immersion at virtual museum and gallery.

Secondly, Virtual Tour system should be constructed with VR social. This requires an environment in which a plurality of people can simultaneously access and view via the media centered on an environment of the interaction and communication of the media 2.0 era. In other words, this is to establish an environment that enables two-way communication in accordance with the museum of the media 2.0 era (Table 3). In fact, museums that can be experienced only through Internet access are not able to take advantage of the features of the Virtual Museum.

According to Capriottia (2016), when audience access to a online website of a real museum, they tend to connect, share, review, participate and collaborate by using tools on the website [31]. Virtual audiences (web users) want to access and connect to websites, share information with SNS, comment on reviews, participate in personal or collective games, and create personal spaces. Of course, it is not only absolutely reliable, but it is important that museums in the age of media 2.0 are able to experience viewing and communicating with other users in virtual space, not just viewing the virtual tour screen .

Finally, it is necessary to make content utilizing Augmented Reality (AR). Of course, Park(2010) insisted that technology of AR applications for art galleries and museums should be approached for the direction of maximizing user's emotional satisfaction rather than technology development[32]. But, in terms of various content development for cultural welfare, it will be useful to induce real tours of domestic museums and galleries and to use the contents of related museum and art gallery exhibits as games on a smartphone. At this point, it is an inevitable that the importance of virtual museums and galleries based ICT will be increased. In particular, all people including children and youth in the cultural marginalized class should be provided with benefits for the benefit of the cultural welfare. But, it is possible that they can not go forward in a more forward-looking and developmental direction due to the difficulty of the budget.

Fundamentally, in terms of cultural welfare, the government leading the ICT-based virtual museum and gallery rather than the private sector should create the equipment and environment to enhance the qualitative and quantitative level of cultural welfare in Korea.

Therefore, it would be better to increase the utilization of the virtual museum than to induce the real museum, and by increasing the interest and intimacy of the potential audience to the museum audiences can naturally approach the real museum.

V. Conclusion

This study focused on culture and art experience centre to present direction of cultural welfare based on ICT. For this purpose, the direction of government policies and the status of cultural welfare services were examined and then this study was analyzed with the case of museums and art galleries based on experiences of domestic and overseas ICT - based cultural welfare services.

Finally, this study suggested the environmental change of Korean ICT cultural welfare service. This will provide opportunities for cultural underprivileged people to enjoy culture and provide opportunities to expand new content in the ICT market.

References

- [1] W.W. Shin, "A Study on the Difference of Perception and Prospect of Cultural Welfare Level," *Journal of Culture Industry*, Vol.16, No.2, pp.41~47, June 2016.
- [2] H.S. Lee, "2011 Analysis of Promotion Status of Cultural Welfare Project for Vulnerable Class," *Audit Research Institute*, 2012
- [3] Ministry of Culture, Sports and Tourism, "2016 The Survey of Cultural Enjoyment," 2017.
- [4] Ministry of Culture, Sports and Tourism, "2016 Survey on National Leisure Activity," 2017.
- [5] H.W Yang, "Socio-economic Value Estimation and Policy Direction of Cultural Welfare Policy", *Korea Culture Tourism Institute*, 2012.
- [6] T.S. Hyun, "A Study on the Concept of Cultural Welfare and Cultural Welfare Policy," *Social Welfare Policy* 26 (12), pp. 101-122, 2006.
- [7] Ibid. T.S. Hyun, "A Study on the Concept of Cultural Welfare and Cultural Welfare Policy," *Social Welfare Policy* 26 (12), pp. 101-122, 2006.
- [8] K.Y. Jeong, "A Study on the Legalization of Cultural Welfare Law," *Korea Culture Tourism Institute*, 2007
- [9] H.J. Kim, "The Trend of Cultural Welfare Policy in Korea and Policy Recommendations for Enlarging the Beneficiary of Cultural Welfare Programs", *Korean association of arts management* 26, pp. 35-63, May 2013.
- [10] Ibid. H.J. Kim, "The Trend of Cultural Welfare Policy in Korea and Policy Recommendations for Enlarging the Beneficiary of Cultural Welfare Programs", *Korean association of arts management* 26, pp. 35-63, May 2013.
- [11] Ministry of Culture, Sports and Tourism, "2016 Lottery Fund Cultural Sharing Project Performance Research," 2016.
- [12] Op Cit., H.J. Kim, "The Trend of Cultural Welfare Policy in Korea and Policy Recommendations for Enlarging the Beneficiary of Cultural Welfare Programs", *Korean association of arts management* 26, pp. 35-63, May 2013.
- [13] K. S. Shin, 2007 Education White Paper "A New Understanding of Museum Education", *National Folk Museum*, 2007.
- [14] International council of museums <http://icom.museum/>
- [15] National Museum of Korea, "Museum Education for Museum Experts", e-Learning Curriculum. 2017. Available: <http://musedu.museum.go.kr/contents/06/01/01.pdf>
- [16] M. R. Gruber, "The Role of E-Learning in Arts and Cultural Heritage Education, University of Innsbruck", *Institute of Educational Sciences*, Austria Open University of the Netherlands, CELSTEC, Netherlands, 2009
- [17] U. H. Heo, "A Study on Restoration and Utilization of Recorded Archaeological Data", *Journal of Digital Contents Society*, Vol. 18, No. 4, pp. 723-731, July. 2017.
- [18] A. Antonaci, M. Ott, and F. Pozzi, "Virtual Museums, Cultural Heritage Education and 21st Century skills", *Istituto Tecnologie Didattiche -Consiglio Nazionale delle Ricerche*, 2013.
- [19] M. Levoy, "The digital Michelangelo Project, in: 3-D Digital Imaging and Modeling," Proceedings, *Second International Conference on*, Ottawa, Canada, 1999.
- [20] N. Di Blas, C. Poggi, "3D for Cultural Heritage and Education: evaluating the impact", in: J. Trant and D. Bearman (Eds.), *Museums and the Web 2006: Proceedings*, Toronto: Archives & Museum Informatics, 2006.
- [21] K. Lee, "A Study on the principles and economic effects of 4W Hologram", *The Journal of Image and Cultural Contents*, Vol.11, pp.79-99 Dec, 2016.
- [22] Smithsonian National Museum of Natural History https://naturalhistory.si.edu/VT3/NMNH/z_NMNH-016.html

- [23] National Gallery. Available: <https://www.nationalgallery.org.uk/visiting/virtual-tour>
- [24] National Museum of Korea. Available: https://www.museum.go.kr/site/main/archive/post/archive_3853
- [25] EAZEL. Available: <https://eazel.io>
- [26] Interview with Independent Curator, H.Y. Gwak, Tuesday, November 21, 2017.
- [27] Ibid. Interview with Independent Curator, H.Y. Gwak, Tuesday, November 21, 2017.
- [28] Y. J. Lim, and Y. S. Lee, "A Study on the Expansion of Cultural Contents through the Case of Sherlock Holmes", *Journal of Korea Multimedia Society*, Vol.20, No.10, pp. 1689-1696, October 2017.
- [29] Ibid. Y. J. Lim, and Y. S. Lee, "A Study on the Expansion of Cultural Contents through the Case of Sherlock Holmes", *Journal of Korea Multimedia Society*, Vol.20, No.10, pp. 1689-1696, October 2017.
- [30] P. Zhao, S. Sintonen, and H. Kynaslahti, "The pedagogical functions of arts and cultural-heritage education with ICTs in museums a case study of FINNA and Google Art Project", In: Donald G. Perrin, Elizabeth Perrin, Brent Muirhead, Muhammad Betz, ed. 2015. *International Journal of Instructional Technology and Distance Learning*, Vol.12, No.1. 2015.
- [31] P. Capriottia, C. Carretónb, and A. Castillo, "Testing the level of interactivity of institutional websites: From museums 1.0 to museums 2.0", *International Journal of Information Management* 36, pp. 97-104, 2016.
- [32] H. W. Park, "A Study on the Current State of Marketable Augmented-Reality-based Mobile Application Development", *The Journal of Image and Cultural Contents*, Vol 3, pp.173-205, Apr. 2010.



Young-June Lim

2008 : Dongguk University, Graduate School of Culture & Arts, Arts Management, MA

2012 : Goldsmiths, University of London, Arts Administration and Cultural Policy, MA

2016 : Ph.D Student, Theatrical Production, Dongguk University

※Interested Fields : OSMU, Transmedia, VR/AR/MR/XR, Deep Learning, CNN(Convolutional Neural Network)



Young-Suk Lee

2010. Department of Image Information Engineering, Pusan University. Ph.D.

2010. Institute of Image and Cultural Contents, Dongguk University, Full-time researcher.

2014. Institute of Image and Cultural Contents, Dongguk University, Assistant professor.

※Interested Fields : Emotional Engineering, Cultural Contents, Character, Transmedia, VR/AR/MR/XR, Deep Learning etc.