

Impact of Digital Content Curation on Audience Communication in Interactive Exhibitions

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ABSTRACT

Interactive technology has changed existing museum modes, creating a gap between audience assumptions and curator expectations. Audience interpretations provide a design challenge in terms of connecting curators with audiences. We developed a research model and used structural equation modeling to address issues on audience perspectives, to explore the interrelationships among curators, interactive exhibitions, and audiences. The results showed that while curators mainly chose the “interactive content of the exhibition” to pass messages to audiences, audiences were also deeply influenced by environment. Though the involvement of interactive content is comparatively deeper, environment and content are both important elements.

Keywords: digital content curation, interactive exhibitions, audience communication, message framing, model

INTRODUCTION/ BACKGROUND

The growing popularity of social networking has highlighted the ways in which new media, such as the Internet and mobile phones, can enable more participatory and interactive communication (Willems, 2012). The extent to which technology has changed the quality of audience participation in radio content production, for example, shows how specific features of new media affect power relations between producers and audiences. User-generated content (UGC) allows users to share and promote aspects of their own lifestyles; UGC allows recipients to play the role of sender (Patel et al., 2015). The development of UGC foreshadowed the birth of interactive curation. Interactive curation allows visitors and curators to change curated content, thereby providing an opportunity for creativity as well as transformational experiences that might later reflect in an individual's attitudes, interests, appreciation beliefs and values (Soren, 2009).

Advancements in digital interactive display technology have greatly influenced exhibitions in conventional museums. Audiences are encouraged to actively access information rather than passively receive it. This trend has not only changed the behaviors of museum visitors but has also promoted intellectualism among curators. Approaches to exhibit design have thus changed from being technology centered to audience centered. Design engages audience participation in the context of the exhibition, thereby creating interactions among audiences, artworks, and environments in an effort to enhance the audience's conceptual understanding and perceptual appreciation of the interactive exhibition.

With the intervention and use of interactive technology, museums have begun to serve the functions of collection, research, and exhibition, as well as education and recreation. However, they have also gradually assumed audience-based rather than museum-based roles. Therefore, audience-based research is an important area that has begun to emerge (Weil, 2000). Sheng and Chen (2012), for example, found that the visitor experience is not necessarily passive. In the physical environment of museums (physical context), the visitor experience is influenced by both personal and social contexts, which create the audience experience.

With museums adopting interactive technology, there has been a turn toward audience-based design. In view of this trend, this study develops a model based on audience experience. This model is employed to understand the real needs of exhibition audiences. The findings can help promote the long-term management and development of museums.

CONCEPTUAL CONTEXT/LITERATURE REVIEW

Interactive technology in museums

Yiannoutsou et al. (2009) found that traditional digital museum systems focus on the single function of organizing exhibitions, and their design patterns are based on the needs of respective exhibits. Thus, their lifecycles are straightforward, lack feedback, and are non-reusable. Moreover, studies have shown that unchanged, or mostly unchanged, settings make revisits unnecessary (Dong et al., 2011). For this reason, many museums use interactive technology in a successive manner in their exhibitions.

Three factors related to the thematic message should be considered in the interactive exhibition. New media and interactive (mobile) technologies allow visitors to be actively involved in the exhibition, sharing co-authority with the curator, though the curator still determines which factors to incorporate into the thematic message. Thus, the following three factors must be managed by the curator: the diversity of new media content, the relationship between included media and the theme of the exhibition, and the interactivity of hands-on works. Visitors must be made familiar with thematic messages in order for them to evaluate an exhibition that is equipped with interactive (mobile) technology.

Relationship between curator and audience

The emergence of digital content has given rise to digital content curators. The main task of the digital content curator is to filter and organize data to suit a given theme, thereby adding new value to information. Curators must consider the audience's perspective when thinking about the idea of the exhibition and, moreover, consider how to create multiple impacts in terms of impression, vision, and feeling. According to Abe (2012), "We are all curators. We all will be sharing into the ecosystem of our friend[s] and families" (p.276). Anyone can be a curator: in their everyday lives, people share information or experiences with friends and family. Instead of creating content, curators discover the core values of information, rearranging and sorting it to create new value (Rosenbaum, 2011). In other words, the curator is not simply a passive or rule-governed intermediary between artist and audience. Rather, the meaning of an artwork or exhibition emerges in and through the appropriations (not necessarily conscious) of objects and space by artists, curators, and other technicians (Acord, 2010).

Research on audience visits

Past research on traditional museum displays mostly focused on audience satisfaction, feelings, comments, etc. Similarly, the literature on digital museums has mostly studied audience participation, satisfaction, and feelings about learning effectiveness. Common themes in museum studies include enjoyableness, usefulness, ease of use, ergonomics, user satisfaction, navigation, interface, content design, geolocalization, knowledge acquisition, fragmentation of attention, isolation, attentional balance, and social interaction. Many of the

evaluation studies conducted in recent years share a common characteristic: measuring the effectiveness of hand held devices in the museum setting. Evaluation questions are sometimes mentioned, as well as the more or less measurable aspects of this intervention (Damala and Kockelkorn, 2006).

In terms of the factors that influence audience visits, the findings of several studies can be summarized as follows. First, younger audiences in particular lose interest in exhibits they find difficult to understand (Cabrera et al., 2005). Second, educational levels affect users' specific interests in different themes and modes of representation (Dong et al., 2011). Third, exploring a museum environment can be a collaborative activity; therefore, audience outcomes can be affected by the interactions involved in exploring a museum with different people (Lehn et al., 2001). Fourth, accumulated cultural capital, in addition to prior knowledge, influences the visitor's level of engagement. This implies that the frequency of participation in cultural consumption also affects outcomes (Taheri et al., 2014).

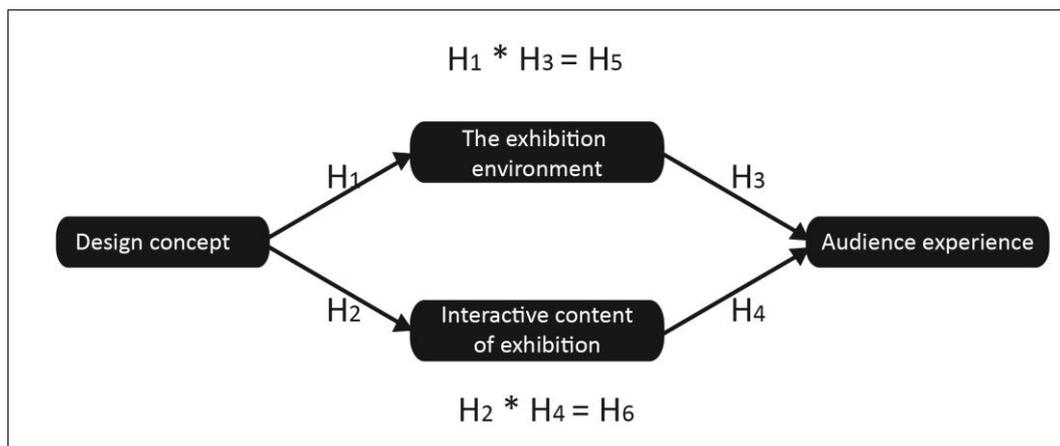
Research architecture

The growing changes in museum styles and types have opened up new perspectives for their long-term operation and management (Damala and Kockelkorn, 2006). Research on audience experience shows that the museum visit is an emotionally intense learning process; emotions can vary during a visit, affected by the visitor's personality and the "feelings" projected by the exhibit (Raptis et al., 2005). Learning in museums is affected by personal, social, and physical contexts (Falk and Dierking, 2000). In this long-term relationship between museums and audiences, many factors can influence participants' personal experiences. These can include lack of interest and time for visitors, the visibility of deployed systems, transparency, and simplicity (Filippini-Fantoni and Bowen, 2007).

Visitors decide for themselves which information they process and how much time they invest in reading (Grüninger et al., 2014). However, learning is also influenced by subsequent experiences that extend or reinforce the museum visit (Cahill et al., 2011). In summary, these factors all interact with each other and determine the experience of the museum visit. At the same time, museums are limited in their capacity to influence how visitors process information.

RESEARCH MODEL AND HYPOTHESES

We developed a research model (Fig.1) that explains visits to museums that employ interactive technology, thereby contributing to the literature of audience visits. Since interactive technology intervenes in and changes the patterns of visits, we examined the impact of the exhibition environment and interactive content on audience intentions to visit.



[Fig. 1 Research mode]

This study contributes to the growing body of research on the interactions between audiences and exhibits. Yiannoutsou et al. (2009) found that mobile technology mediates three types of interaction between visitors and the museum environment: i) interactions between exhibits and visitors (e.g., information about the exhibit provided to the visitor), ii) interactions between visitors and exhibits (e.g., visitors' comments about exhibits), and iii) interactions between visitors (exchange of information and comments among visitors). This enrichment of interaction between visitors and museums could result in more or different learning opportunities (Cobb, 2002).

Research question RQ1: Which factor has the most effect on the design concept: the exhibition environment or the interactive content of the exhibition?

Relationship between the design concept and the exhibition environment

While traditional exhibitions present artworks in a conventional way, interactive exhibits intertwine the aesthetic concept and the space (Tsau et al., 2014). This is why there are two categories of motivational factors. Ciolfi and McLoughlin's (2012) qualitative study of Folk Park provides insight into which aspects of the museum are particularly engaging and could be further highlighted—namely, the immersive experience of inhabiting the buildings, the multisensory nature of the displays, and especially the “lived” character of the museum. Moreover, evocative content and physical artifacts create connections between what visitors see in the museum and real-life scenarios; this also encourages active participation. We can thus infer that the exhibition environment is an important and influential aspect of the design concept.

Hypothesis H1: The design concept will be positively related to the exhibition environment in interactive technology displays.

Relationship between the design concept and the interactive content of an exhibition

Hakvoort (2013) argued that museums should aim to unify several technologies to capture visitor attention, engage interaction, and facilitate social activities. By incorporating exhibits, objects, devices, and people into a network of interconnected systems, new patterns, interaction types, and social relations can be expected to emerge. Furthermore, Cabrera et al. (2005) suggested that the aim of developed activity and designed application prototypes is to interactive (augment) interaction with the museum. Rizvic et al. (2015) presented an interactive city model that helps curators explain attractive elements in a city. Thus, interactive devices submit opportunities for finding interrelations among objects and concepts in the realm of museum.

Hypothesis H2: The design concept will be positively related to the interactive content of an exhibition in interactive technology displays.

Research question RQ2: Which factor contributes most to the cumulative audience experience: the exhibition environment or the interactive content of the exhibition?

Relationship between the exhibition environment and audience experience

Learning in museums is affected by personal, social, and physical contexts (Falk and Dierking, 2000). The personal context involves the audience's prior knowledge, interests, and experiences, including how much choice and control they have over their museum experience and their motivations and expectations regarding the visit. The social context includes the social interactions that visitors have with others within and outside of their own social groups. It follows, then, that the exhibition environment may affect audience experience.

Hypothesis H3: The exhibition environment will be positively related to audience experience in interactive technology displays.

Relationship between the interactive content of the exhibition and audience experience

It is important to understand the nature of the relationship between exhibits and visitors (Raptis et al., 2005). Some literature has shown that audiences have their own expectations of exhibits. For example, most visitors expect museums to generally improve their knowledge and expand their learning horizons (Dong et al., 2011). Additionally, the visitor's purpose is to see and learn more, not to explicitly use the technology (Schwarzer, 2001). Audiences often say that exhibits use professional terminology that is difficult to understand and thus fail to meet their general expectations and requirements. Regarding digital content curation, it is important to understand the differences between the knowledge architecture of curators and the cognitive abilities of audiences (Dong et al., 2011). Studies have shown that exhibits can be supported by drawing upon the stimuli produced during the visit using context-aware mobile devices. Therefore, interactive technology should be viewed as a tool to enhance user involvement in the cultural discovery

process and provide a meaningful and worthy experience (Raptis et al., 2005).

Hypothesis H4: Interactive content in an exhibition will be positively related to audience experience in interactive technology displays.

Research question RQ3: Which contributes more to the path from design concept to audience experience: the exhibition environment or the interactive content of the exhibition?

Relationship between design concept and audience experience via the exhibition environment

Many studies have found that the exhibition environment affects audience experience. If the design concept of the exhibition environment is carefully considered, it can stimulate audience participation. McIntyre (2009, p.159) described the museum experience as “one of learning through consideration of, immersion in and reflection upon the objects and environments presented as having artistic relevance.” Many studies have found that the exhibition environment affects visitor experiences. If the thematic message (design concept by curator) of the exhibition environment is carefully considered, it can stimulate visitor participation.

Hypothesis H5: The exhibition environment will be positively related to the path from design concept to audience experience in interactive technology displays.

Relationship between design concept and audience experience via the interactive content of the exhibition

Previous research has shown that innovative variation helps to capture the diversity in visitors' ideas and mental processes (Rennie and Johnston, 2004). When considering interactive curation, it is important to understand the differences between the knowledge architecture of curators and the cognitive abilities of visitors. Previous research has shown that innovative variation helps to capture the diversity in visitors' ideas and mental processes (Rennie and Johnston, 2004). In short, the development of digital technology exhibitions has gradually become a trend. Thus, the development of exhibition content should consider the public's requirements and help them broaden their scientific viewpoints (Dong et al., 2011).

Hypothesis H6: The interactive content of the exhibition will be positively related to the path from design concept to audience experience in interactive technology displays.

METHODOLOGY

As noted earlier, audience-based research is now an important issue. Using a questionnaire survey, this study chose the 2013 Action@Pavilion of Dreams in Taipei, Taiwan, as its main research object. The theme of the exhibition was “dreams.” Artists used technology to interpret the theme and create coherent content for each exhibition hall (Fig.2). However, interactive exhibits provided opportunities for audience participation. The

emotions expressed through the interactive technologies were abstract and unreal, allowing room for self-play and imagination. This fully demonstrated the notion that digital content curation can add new perspectives and content by using existing resources to regroup and create new value and appearance.



[Fig. 2 Photos of “Action @ Pavilion of Dreams” exhibition hall]

Measurements

The basic visitor information gathered for this research included a number of statistical items, including gender, age, education, visit alone or in a group, prior experience, and visit frequency. Audience satisfaction was measured using Likert scales to score various statements. The five dimensions were *very satisfied*, *satisfied*, *general*, *dissatisfied*, and *very dissatisfied*; five points indicated *very satisfied*, four points *satisfied*, and so forth.

Sample

The survey used a random sampling method. Questionnaires were distributed outside the exit of the exhibition hall August 1–15, 2013. A total of 349 surveys were returned. After eliminating questionnaires with missing values, there were 300 valid questionnaires (effective recovery rate: 85.96%). There were 128 males (42.7%) and 172 female (57.3%); age ≤ 20 (64, 21.3%), age 21-30 (93, 31%), age 31-40 (71, 23.7%), age 41-50 (53, 17.7%), age ≥ 50 (19, 6.3%); For education, Elementary (6, 2%), Junior high (10, 3.3%), Senior high (26, 8.7%), University (142, 47.3%), Institute (116, 38.7%).

RESULTS

The measurement model

We used factor analysis to analyze data and uncover underlying causes. This data indicated that exploratory factor analysis (EFA) within factor analysis would apply well to this case. Regarding the results of the principal component analysis, the data passed the thresholds for sampling adequacy (KMO MSA = 0.950; Bartlett's test of sphericity = 2543.586, $p < 0.001$). Thus, we converted eleven variables into four principal components. The four factors explained 82.355% of the variance in the data. Varimax rotation was used to maximize the variance; the matrix showed that each of the four extracted factors tended to have its own

loading of particular variable content. Table 1 shows the exploratory factor analysis loadings and confirmatory factor analysis (CFA).

Table 1. Individual item loadings

Item	Factor loadings (EFA)	Factor loadings measurement model (CFA)
Design concept (DC)		
Diversity of New Media Content (DivNMC)	0.814	0.86
Relation between Media and Works (RelMW)	0.784	0.83
Interactivity of Hands-On Works (IntW)	0.652	0.86
Interactive content of exhibition (ICE)		
Attraction of Visual Design(AttVD)	0.630	0.79
Attraction of Interactive Works(AttIW)	0.474	0.83
Creativity in New Media Exhibit(CreNME)	0.684	0.84
Creativity in Spatial Design (CreSD)	0.724	0.84
The exhibition environment (TEE)		
Comfort of Recreation Facilities (ComRF)	0.811	0.87
Comfort of Exhibition Route (ComER)	0.820	0.78
Audience experience (AE)		
Comfort of Visit and Hands-On Exhibit (ComVE)	0.597	0.82
Comfort of Lighting and Atmosphere of Exhibition(ComLA)	0.704	0.76
Recommended value	>0.70	>0.70

The structural model

Structural equation modeling (SEM) was used to test the measurement model by running confirmatory factor analysis (CFA) with the maximum likelihood estimation (MLE) method using Lisrel 8.72. Aside from the chi-square statistic ($\chi^2=75.74, p<0.001$), all fit indices demonstrated a good fit with the data (Table 2).

Table 2. Structural model fit indices

Name of index	Value of index	Recommended value	Result
GFI	0.96	>0.9	Conform
RMR	0.019	<0.05	Conform
RMSEA	0.058	0.05<RMSEA<0.06	Conform
AGFI	0.92	>0.9	Conform
NFI	0.99	>0.9	Conform
NNFI	0.99	>0.9	Conform
CFI	1.00	>0.9	Conform
RFI	0.99	>0.9	Conform
IFI	1.00	>0.9	Conform
PNFI	0.68	>0.5	Conform
PGFI	0.55	>0.5	Conform
χ^2/df	1.993	<2	Conform
CN	259.51	>200	Conform

From the result, we titled the factors “Design concept,” “Interactive content of exhibition,” “The exhibition environment,” and “Audience experience.” Measurements for Cronbach’s alpha, composite reliability (CR), and average variance extracted (AVE) are shown in Table 3. We estimated the path coefficients(β) and R^2 values of the structural model. Table 4 shows the overall results, which are also summarized in Figure 3.

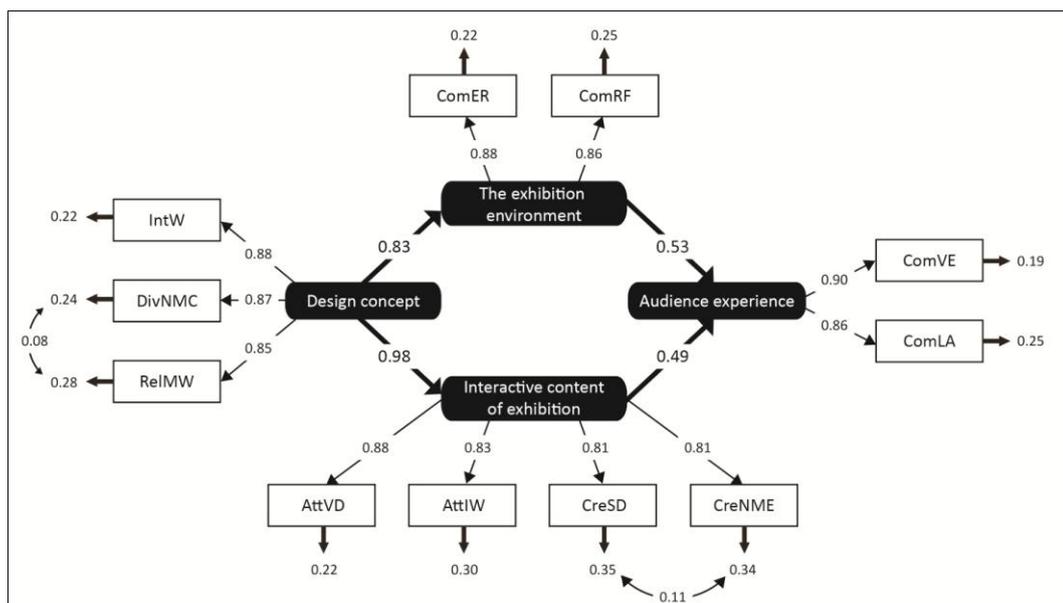
Table 3. Individual item loadings, Cronbach's alpha, CR, and AVE

Item	Factor loadings structural model (SEM)	α	Composite reliability	Minimum item-total correlation	AVE
Design concept (DC)		0.883	0.90	-	0.75
Diversity of New Media Content (DivNMC)	0.87				
Relation between Media and Works (RelMW)	0.85				
Interactivity of Hands-On Works (IntW)	0.88				
Interactive content of exhibition (ICE)		0.905	0.90	0.69	0.70
Attraction of Visual Design(AttVD)	0.88				
Attraction of Interactive Works(AttIW)	0.83				
Creativity in New Media Exhibit(CreNME)	0.81				
Creativity in Spatial Design (CreSD)	0.81				
The exhibition environment (TEE)		0.820	0.88	0.85	0.78
Comfort of Recreation Facilities (ComRF)	0.86				
Comfort of Exhibition Route (ComER)	0.88				
Audience experience (AE)		0.800	0.87	0.95	0.76
Comfort of Visit and Hands-On Exhibit (ComVE)	0.90				
Comfort of Lighting and Atmosphere of Exhibition(ComLA)	0.86				
Recommended value	>0.70	>0.70	>0.70	>0.50	>0.50

Table 4. Hypothesis testing results (n = 300)

Hypothesis	Path	β/γ (t-Values)	Significance
1	Design concept → The exhibition environment	0.83*** (14.70)	<0.001
2	Design concept → Interactive content of exhibition	0.98*** (18.36)	<0.001
3	The exhibition environment → Audience experience	0.53*** (7.57)	<0.001
4	Interactive content of exhibition → Audience experience	0.49*** (7.25)	<0.001
5	Design concept → The exhibition environment → Audience experience	0.44	<0.001
6	Design concept → Interactive content of exhibition → Audience experience	0.48	<0.001

The factor analysis showed that the audience's horizon for Action@Pavilion of Dreams was divided into two parts: curator and audience. The curator's factor was "Design concept"; this factor included "diversity," "relationships," and "exhibit's interactivity." The audience factors were divided into two stages: "audience visited the procedure" and "audience experience." For the stage "audience visited the procedure," to distinguish the audience's motivation for visiting, one part involved the exhibition environment, which included the comfort of the recreation facilities and the exhibition route. The other concerned the interactive content of the exhibition, including the attractiveness of the visual design and the interactive works, and the creativity of new media exhibits and spatial design. The other phase, "audience experience," included the comfort of the visit, lighting, and the atmosphere of the exhibition. All of this indicates that the audience's visit involved a series of interrelated factors that affected the information.



[Fig. 3The structural model output path diagram]

DISCUSSION

Regarding the progressive development of interactive technology, the curators and designers also explained that it could be a challenge to find the resources, people with appropriate expertise, and space for new technologies; space in both the physical sense, and in the sense that they had to have mental space to imagine the possibilities that might come with new technologies. (Maye et al. 2014). Using interactive displays, visitors are encouraged to actively learn, engage with and access information rather than passively receive it (Falk et al. 2004). This trend has not only changed the behaviors of museum visitors but has also promoted intellectualism among curators. Approaches to exhibit design have thus changed from being conservation of authentic materials centered to visitor centered. Design engages visitor participation in the context of the exhibition, thereby creating interactions among visitors, artworks, and environments in an effort to enhance the visitor's conceptual understanding and perceptual appreciation of the interactive exhibition (McIntyre, 2009). With museums adopting mobile technology, there has been a turn toward visitor-based design. In view of this trend, this study develops an interactive curation model based on enhancing visitor experience. This model is employed to identify the real feels of exhibition visitors. The findings can help promote the curators' exhibition planning and visiting of museums.

There are several key findings in this study. First, the model investigated relationships between curators and visitors and shows the process whereby curators empower visitors. H1 and H2 are validated. The initial thematic message stage belongs solely to the curator; then, through the use of two different avenues to reach the visitor. When a visitor engages in interaction with the exhibits, the environment, and other members of audience, she/he takes a more active role in interpreting the curator's ideas and creating the overall atmosphere. At this time, the evaluation of the effects of the visit experiences emphasizes the instant emotive state rather

than post-visit satisfaction. In this regard, we believe that their participation in an interactive curation exhibition resembles their watching an advertisement under certain circumstances or with certain motives. Second, H3 and H4 were validated by our results. We've gained a clearer understanding of how messages are transferred over these two avenues through mobile technology displays to visitors, in a way that is similar to advertising. This can be divided into two subsequent categories: "accessibility" and "diagnostic." Third, H5 and H6 were validated, in that the results suggest that after the curator passes messages to the visitor via the two different avenues, their influence on the visitor's experience varies; this also reveals the visitor's affect state.

1. Transfer control

As mentioned in the literature review, the intervention of interactive technology has transformed the role of museums from being museum based to being audience based. That is, in the design and planning process, today's curator recognizes the audience as a key figure in interpreting the exhibit. Abe's (2012) comment, "We are all curators," confirms the existence of this relationship. Research regarding visitor experiences when using mobile applications in different contexts suggests that museum visits are an emotionally intense learning process (Raptis et al., 2005). Visitors decide for themselves which information they want to process and how much time they will invest in the accumulation of new knowledge (Grüninger et al., 2014). Beaujot (2015) suggests that the last decade has given rise to a subset of museum visitors that no longer passively accept the authoritative narrative given by the curator; this subset instead seeks to share authority with curators. Thus, curators must consider the visitor's perspective when thinking about the idea of the exhibition and, moreover, consider how to create multiple impacts in terms of impression, vision, and feeling as well as allow visitors to immerse themselves into the stories being communicated.

2. Accessibility-diagnostic model

Feldman and Lynch's (1988) accessibility-diagnostic model suggests that the memory of a particular message can be used as a basis for life judgments. Depending on memory availability, diagnostic messages affect consumers' inference strategies regarding unknown messages. As mentioned earlier, curators indirectly relinquish their authority for interpretation. However, following the accessibility-diagnostic model, a curator uses the two paths of the "The exhibition environment" and "Interactive content of exhibition" to deliver messages. The "Interactive content of exhibition" is described as "accessibility"; this means you can easily seek out information from memory. "The exhibition environment," regarded as "diagnostic," helps consumers believe that the message can be used to help complete their judgment.

The results show that when the curators released their authority to interpret exhibits, they mainly chose "Interactive content of exhibition" ($\beta = 0.98$) to pass messages into the audience's memories; "The

exhibition environment”($\beta = 0.83$) was for auxiliary audience memories, helping the audience to judge the message. This answers the first question of this study—that is, the factor “interactive content of the exhibition” has the most effect on the design concept. On the other hand, the audience’s perception of the final part of the message, “The exhibition environment” ($\beta = 0.53$), was higher, followed by the “Interactive content of exhibition”($\beta = 0.49$). Thus, it can be speculated that the environment influences the audience more deeply in interactive technology displays. This result answers the second question research question—specifically, the factor “the exhibition environment” contributes most to the cumulative audience experience.

3. The effects of messages through different mediums

Yiannoutsou et al. (2009) found that traditional digital museum systems focus on the single function of organizing exhibitions, and their design patterns are based on the needs of respective exhibits. Patel et al. (2016) explored visitors’ responses to an installation that stimulated various user-generated content. They found that digital technologies provide opportunities to facilitate visitor engagement and new forms of participation, sociality and creativity. Past research on traditional museum displays has mostly focused on visitor satisfaction, affective responses, and feedback (Pekarik et al, 1999). Similarly, past literature on digital museums has mostly studied visitor participation, satisfaction, and feelings about learning effectiveness (Katz and Halpern, 2015). Common themes for museum studies include enjoyableness, usefulness, ease of use, ergonomics, user satisfaction, navigation, interfaces, content design, geo-localization, knowledge acquisition, fragmentation of attention, isolation, attentional balance, and social interaction (Packer, 2008). While many investigations of visitor experiences in an interactive (mobile) exhibition focus on various satisfying, confirming, or aesthetic dimensions, this study also focused on the comfort of hands-on exhibits and the enjoyment of the visit, lighting, and the atmosphere of the exhibition and how these aspects enhance visitor experiences. Our results showed that the content of the exhibition and the environment are complementary—both are important and contain integral elements.

CONCLUSION

Tilden (1957) suggested that the function of a traditional heritage interpretation is to inspire visitors to better identify themselves and to find personal meaning and inspiration in park/heritage services. Since interactive curation intervenes in and changes the patterns of visits, we examined the impact of latent variables as thematic message, the exhibition environment, and interactive content on visitor affected experience. Two factors helped distinguish a visitor’s perceptions of the thematic messages that the curator wished to convey. One factor involved the exhibition environment, which included the comfort of the recreational facilities and the exhibition route. The other concerned the interactive content of the exhibition, including the attractiveness of the visual design, the interactive devices, and the creativity of new media exhibits and spatial design. An interactive exhibition Action@Pavilion of Dreams was investigated and conducted a

questionnaire survey regarding audience participation.

The factor analysis showed that the visitor's horizon for Action@Pavilion of Dreams was divided into two factors: thematic message, the exhibition environment, interactive content of exhibition, visitor experience. Thematic message has a positive loading (0.83, $t=14.70$) on the exhibition environment. Thematic message has a positive loading (0.98, $t=18.36$) on Interactive content of exhibition. The exhibition environment has a positive loading (0.53, $t=7.57$) on Visitor experience. Interactive content of exhibition has a positive loading (0.49, $t=7.25$) on Visitor experience. Thematic message loaded total effects (0.92, $t=17.67$) on Visitor experience through the exhibition environment and Interactive content of exhibition. Thematic message has a positive loading (0.44) on Visitor experience through the exhibition environment. Thematic message has a positive loading (0.48) on Visitor experience through Interactive content of exhibition.

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