

# Pre-post Test Opinions Regarding Virtual Exhibits Vs. Physical Exhibits

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## 1. Introduction

In the last few decades, museum environments have utilized new technologies to meet the varied needs and learning styles of visitors. Museums today are experimenting with many avenues of access for visitors, including computer-based options like art collection database programs and museum websites. The development of virtual museum websites has expanded the possibilities for delivering better-tailored information with more public accessibility. Museums confronting the reality of works produced in digital media must meet another challenge: the integrity and logic of method in presentations of art. As a result, many museums have introduced virtual exhibitions as a new way of showing art and communicating with visitors. A number of formal visitor studies have evaluated the physical presentations of exhibitions. However, little research has been conducted on virtual museum exhibitions. This study will explore visitor's changing opinions regarding both the physical and virtual exhibits following the viewing of the virtual exhibition. The findings of this study will have the potential to provide useful information on the growing demand for new technologies in museum environments.

## 2. Research Overview

This study included five phases. The first phase involved establishing the theoretical work ground by reviewing the literature. The second phase was sample selection. The third phase involved selecting the virtual exhibit websites. The fourth phase involved creation of the survey instrument. The fifth phase included data gathering using survey.

### 2-1. Sample

A sample of 25 students was purposively selected from a school of visual arts at a southeastern university in the United States. The majority (92%) were female students. Twenty percent were graduate students and 80% were undergraduates. The ages of participants ranged from 20 to 38 years old. Sixty-eight percent were under 25, and thirty-two percent were under 25. The mean age was 22.5

years old. The entire sample could be described as a young visually-trained, computer literate and educated.

### 2-2. Selection of Virtual Exhibit Websites

The two virtual museum exhibit websites selected for the study were chosen according to several criteria. All sites were a) museum-based, b) on-line, and c) contained art and/or artifacts, exhibit labels, label copies, audio-video tools, and games or activities related to the exhibit. *The Virtual Smithsonian* (<http://2k.si.edu>) and *the Mesoamerican Ballgame* (<http://www.ballgame.org>) met these criteria and were chosen for the study. Both sites were visually complex and easy to access.

### 2-3. Survey

The survey research included three parts. Part A requested demographic information and inquired about the respondent's prior experiences with both physical and virtual museum exhibits. After completing Part A, they viewed the virtual exhibit website, then asked to fill out the portion of Part B. Part B asked respondents to rate their overall satisfaction with the website and its usability of design. A total of 68 questions were asked using a Likert-type scale as a measurement. Students were asked to give consent prior to beginning the project. Each student spent approximately 30 to 45 minutes viewing the site and filling out a survey. The viewing location was in the computer labs in one of the University Fine Arts buildings. The survey was distributed to three groups with approximately eight students each. Groups were divided in two, then, an equal number were directed to the two selected websites.

### 2-4. Data Analysis

Data from the surveys was tabulated for descriptive percentages in order to identify numerical patterns of relationships. Collected data was arranged to make it comprehensible to the reader and to emphasize critical findings. Diamond (1999) mentioned that, "Findings should be grouped into headings or themes and presented in order

of their relative importance." Statistics provide a means by which numerical data can be made more meaningful so that the researcher may see the nature of the relationships in the phenomenon under study. Before considering any statistical procedure, it is essential that the researcher develop the habit of looking closely at the data collected and explore various ways of organizing it in order to see what patterns can be detected (Leedy, 2001). The SAS statistical software program was used for the analysis of survey data.

### 3. Findings

The data shown in Table 1 suggests that respondents were more likely to value the viewing artifacts up-close and in detail in physical exhibits after viewing the virtual exhibit. At the same time, respondents revealed their enjoyment in manipulating artifacts in virtual exhibits. Although respondents were more likely to read text and listen to audio in virtual exhibits, results showed they reported valuing playing games or activities rather than reading details about artifacts in both virtual and physical exhibits. One interesting finding was that after viewing the virtual exhibit website respondents were more likely to want to use audio-guide even though it wasn't free.

(Table 1) Changes in Website Design Related Opinions after Viewing the Virtual Exhibit Opinions After Viewing the Virtual Exhibit

Opinions After Viewing the Virtual Exhibit		
	Increase in level of importance	Decrease in level of importance
Regarding the virtual museum exhibit experiences	Manipulate art/artifacts Read caption Listen to audio Watch video Participate in games or activities	Up close view art/ artifacts Get more information
Regarding the physical museum exhibit experiences	View art/ artifacts Detail view art / artifacts Audio-guide (if not free) Participate in games or activities	Read caption label Read label copies Audio-guide (if free)

#### 3-1. Comparison of Groups With and Without Prior Virtual Exhibit Experiences

For a better understand of the findings, the responses of students who had never before viewed a virtual exhibit were compared to students who had viewed other virtual exhibits prior to the test. The data was derived from one of the survey questions asking "Have you ever viewed a virtual museum exhibit?". From this response, participants were sorted into two groups. Group 1 (20%) represented participants who had never viewed a virtual exhibit before, while Group 2 (80%) indicated those who had viewed a virtual exhibit prior to the test.

##### 3-1-1. Changes in Opinions Regarding Visiting

#### Physical Exhibitions Following Viewing the Virtual Exhibit Between Two Groups

Group 1, twenty students who had never viewed a virtual exhibit prior to this study, reported an increase in the level of importance placed on viewing objects in real life and up-close in physical exhibits. However, the level of importance regarding reading object caption label and label copies decreased. Group 2 consisted five students who had viewed a virtual exhibit prior to the study. After viewing the virtual exhibit, they reported an increase in the level of importance in following a docent-led tour, but were less likely to observe objects up-close, read both captions and label copies, and participate in educational activities in a museum.

#### 3-1-2. Changes in Opinions Regarding Virtual Exhibitions Following Viewing the Virtual Exhibit

In the virtual exhibit, participants highest rated activities included listening to audio explanations, watching video, and participating in educational activities. These were listed as more important than learning details and requesting more information. Compared with Group 1, who had never viewed virtual exhibits, both group's responses after viewing the virtual exhibit were almost the same levels. That implied that overall responses regarding viewing the virtual exhibit revealed almost the same results in group with and without prior virtual exhibit experiences.

### 4. Conclusion

The results of the study show that respondents' opinions of both physical and virtual museums were influenced by the frequency of their exposure to virtual museum exhibits. This result indicates that something attractive in the newness of one's first visit to a virtual museum "wears off" after later visits to similar sites. On the other hand, many of the comments of respondents indicate that virtual exhibits not only enrich the experience of visitors to physical museums, but also provide a unique experience that cannot be duplicated in real life. It is also important to note that there were only five participants who had viewed a virtual exhibit prior to the study. A large sample may yield different results. Based on study results, recommendations were made for the future role of interior design in virtual space that stands independent from a physical building and resides only on the Internet.

### References

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