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## Informational Value of Museum Web Sites

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## Informational Value of Museum Web Sites

by V. Kravchyna  
and S. K. Hastings

### Abstract

What information are virtual visitors looking for on museum Web sites? This paper is a first step in a larger investigation into the informational value of museum Web sites. Scholars, teachers, students, museums staff, and museum visitors are the main categories of visitors examined in this study. Questions were asked of these museum audiences about their use of museum Web sites, museum databases, and other aspects of virtual visits.

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## Introduction

In 1999, the School of Library and Information Science (SLIS) at the University of North Texas started a new program in Digital Image Management. The University of North Texas and the African American Museum (AAM) in Dallas are collaborative partners in a program designed to produce expert managers of digital images and information (Hastings, 2000). Designing the database for the Sepia photographic collection and creating a Web site for the museum were the major parts of the project during the first year of collaboration. While designing the Sepia photographic collection database, fellows of the Institute of Museum and Library Services (IMLS) sponsored project had difficulties with

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determination, selection, and creation of metadata for later use by the museum's virtual visitors. There were arguments over the quality and quantity of information that AAM Web site should provide for virtual visitors. It was decided that additional research about virtual museum visitors' needs should be done. Currently, there are no studies on virtual museum visitors and their needs, especially uses of the images in the museums' collections available on the Web.

Some of the basic questions to frame this study follow: what kind of information are Web users looking for? What quality and quantity of images would they like to see on a page? What are their purposes for using images from the museum's collections? Is the information adequate?

This research is the first step of a deeper investigation of informational value of the Web sites of museums. A combination of the Delphi method and survey research is used to investigate the virtual museum visitors' needs. The goal of the first part of the project is to gather general data on informational and educational needs of a variety of virtual museum users.

The survey is a Web-based interactive questionnaire distributed on the Internet. The survey gathers a variety of information about available technology used for educational, recreational, and information retrieval purposes. The questionnaire Web site is hosted on the server in the Digital Imaging lab at UNT.

Electronic messages were sent through different museum listservs to identify how museums distribute information about their collections and about educational programs. Two local high schools, Denton High School and Ryan High School, granted their permission to ask teachers of history, art, social studies, and humanities about their usage of museums Web sites. The schools also sent e-mail requests to students who have e-mail addresses to answer the aforementioned survey. The e-mail message was also sent to the Art users listserv of School of Visual Arts at the University of North Texas, SLIS listserv. Request cards were distributed at the conferences such as that of the American Society of Information Science and Technology in Washington, D.C.

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## Literature Review

This paper is an interim report about informational needs of museum Web sites visitors. The analysis of data is based on a portion of the whole survey.

It is hard to define why the museum guests physically visit museums and virtually go to the museum Web sites. Some people go to museums to enjoy temporary exhibits and permanent collections, while others go to meet people and museum staff. Artists go to draw inspiration for future creative works. Some go to do special projects and assignments. The difference with virtual visits is that the actual visit is not a physical one; they live far from art centers and museums, sometimes even across oceans. Virtual museum visitors expect to get needed information about museums collections. They assume that the museums they visit online will offer digital image collections full of paintings, artworks, historic illustrated manuscripts, photographs, drawings, and museum objects - images of items that are not normally accessible.

Few museum administrators are able to predict what visitors expect from museums and their Web sites. An analysis of a survey for teacher's packets created and distributed by the Dallas Museum of Art indicated that museum visitors did not make use of the museum's Web site. What information do they look for? How does museum content fit into school curriculum and learning

standards?

Years of formal education at high schools, colleges and universities are not the only years during which people educate themselves: most learn outside of formal schools. Entertainment and leisure opportunities are rich sources for self-education. "Despite years of public educational efforts, the important role museums ... play in helping the public learn has never been fully understood nor appreciated" [1]. Visiting a museum's Web site is another way of free learning in the area of art appreciation.

Museum digital images can be used for animation, reconstructions, and in other innovative ways to visualize static materials. A great example is one of the CD-ROM serial "Digital Masterpieces", produced in Germany, which shows a video file about Leonardo Da Vinci's life and art works (at <http://www.odranoel.de/indexeng.htm>).

The Cost of Digital Image Distribution research completed by Howard Besser and Robert Yamashita at the University of California, Berkeley, showed that art images could be used for both creative and pedagogical purposes. This research (at <http://sunsite.berkeley.edu/Imaging/Databases/1998mellon/>) was oriented towards art historians and researchers. Little consideration is given to students' needs for digital images and contextual information, as well as the needs of museum visitors. "Remote access to study images is likely to be a tremendous advantage. Students lack extensive private collections of books and the extended library loan privileges that are afforded to faculty, and [students] may not even have access to the slide library" [2]. Multimedia devices such as motion, interaction and a mixture of media are "very effective in keeping the classroom focused and attentive" (Stebly, 1998).

Today, museums and their Web sites are considered as multidisciplinary educational centers that provide information for a variety of cross-curriculum requirements. Most museums, DMA in particular, are ready to prepare essential educational packets for art history classes.

Museum collection databases often do not provide profound intellectual information for the users. "Contextless digital bits" travel all over the world changing the way the original artwork is interpreted. Digital presentation of image information serves different purposes such as to provide educational materials for educators and students, or to construct research across diverse fields. These digital images - in the absence of a context - can be used to write essays during composition classes or to do research in art history. Collaborative opportunities between museums and students can be united in research toward the discovery of new knowledge and information about a specific image. Some museums provide space on museums Web sites for students to upload essays and research papers that can be read by any visitor.

A gamut of the museum images found on Web sites can be useful for learning and teaching social studies, history, foreign languages, and other subjects. If pedagogues are dedicated to their profession, as Mather (2000) suggested, they should "share facts about the historical significance of a selected cultural celebration", and they could develop the curriculum that stimulates students to learn and to be active participants in gathering new knowledge about a given topic to share with friends, family, and classmates. Some teachers went further in their exploration of new constructive methods of teaching and adapting technology in the classroom by allowing children to create their own museums with the help of their teachers or museum educators. Students learn best when they become immersed in their learning and communicate knowledge (Mather, 2000; Passe and Whitley, 1998).

## Methodology

For the purposes of this paper, selected questions were asked to find the major reasons for visiting museum Web sites.

The first set of questions is about available software, such as "does your computer give you an opportunity to listen to audio files and watch video files"?

The second set of questions concerns frequency of virtual visitations of museum Web sites.

1. Do you visit the museum Web site before and/or after you go to the museum? Do you visit museum Web sites even if you do not physically go to the museums?
2. How often do you visit museum Web sites (everyday, once a week, once a month, once a semester, once a year)?

The third set of questions is about the information visitors are looking for on museum Web sites. What is the purpose of visits to museum Web sites?

- a) to find information about recent exhibits?
- b) to find information about special events in the museum?
- c) to search museum collections?
- d) to find additional materials for the research needs?
- e) to find information how to contact museum staff?
- f) to find directions to museums?
- g) to buy exhibits tickets online?
- h) to buy gifts from museums gifts shop?
- i) to find an appropriate image?

The idea to create an Internet-based survey was based on Witte, Amoroso, and Howard (2000), as well as the National Geographic Society Web site (at <http://survey2000.nationalgeographic.com>). Such surveys can reach a broader audience and collect a diversity of data. Active Server Pages technology was used to conduct research using the Internet survey.

The survey consists of five main sections designed to collect data from teachers, students, museum educators, museum visitors, and scholars, and to store their answers in the database for further analysis.

There were 149 responses, with 124 being valid for analysis. There were responses from 14 scholars, 21 teachers, 34 students, 35 visitors, and 20 members of museum staff.

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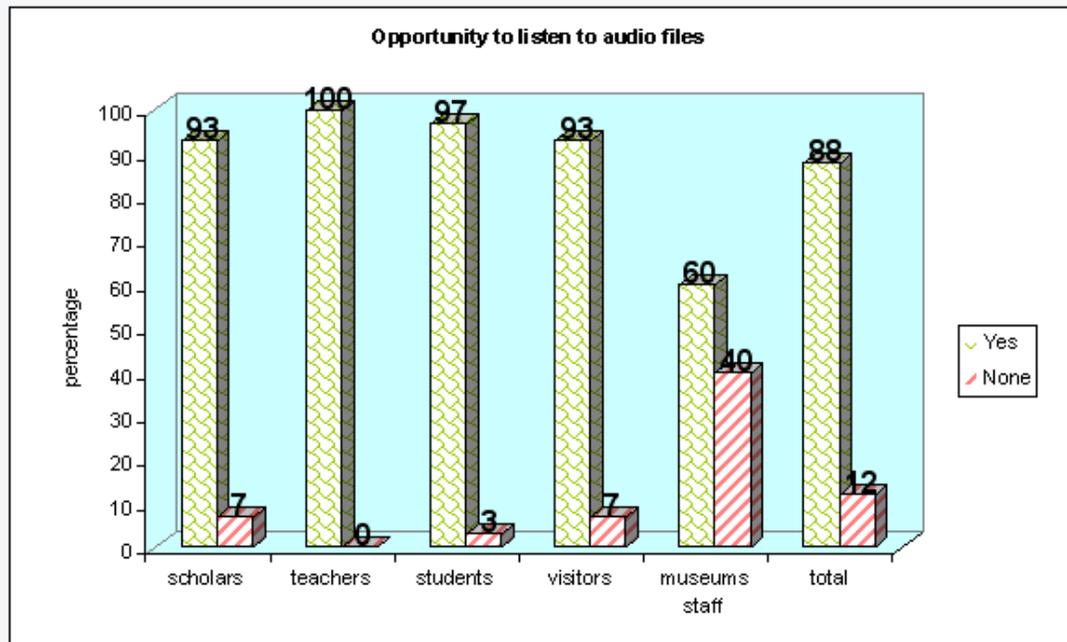
## Software Questions

*Do you have the opportunity to listen to audio files and watch video files?*

The answer to this question gives us an idea about the availability and usage of multimedia software. Information about museum collections presented by audio and video files helps create a sense of reality. If virtual visitors can listen to voices of famous artists and can see them in their work, they probably will remember their experience for a longer period of time.

We know that multimedia enhances the learning experience and accommodates more learning styles; "each visitor learns in a different way, and interprets

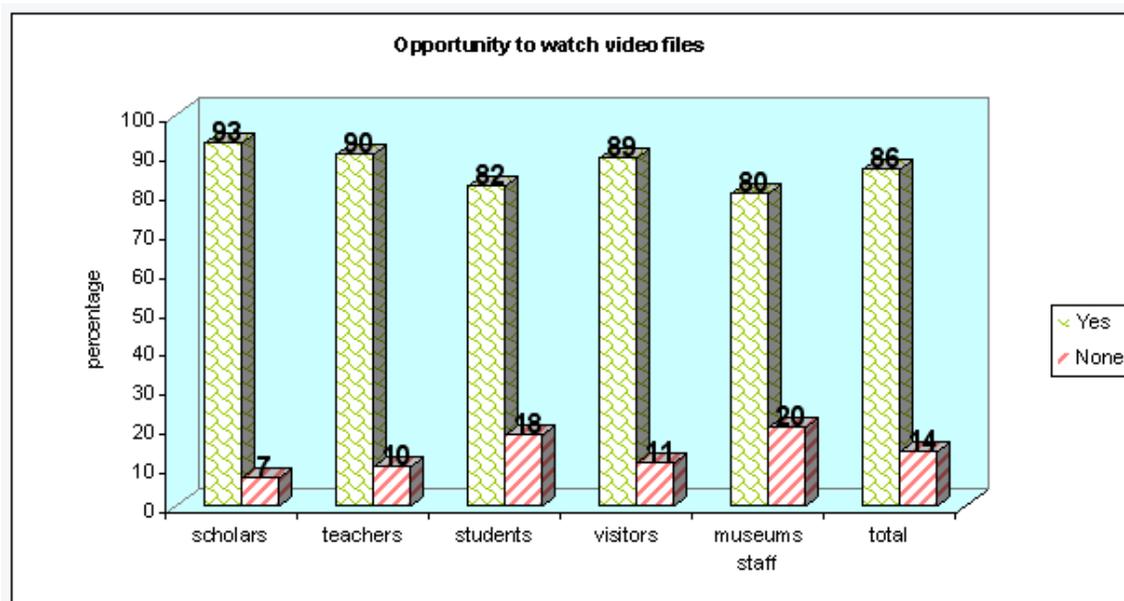
information through the lens of previous knowledge, experience, and beliefs" [3]. In addition, this information provides some measure of the technical sophistication of visitors to museum Web sites.



**Figure 1: Opportunity to listen to audio files.**

The overall percentage of people who do not have the opportunity to listen to audio files is very low (Figure 1); the large number of museum staff who do not listen to audio files may be explained by a sheer unawareness of free audio software that can be downloaded from the Internet. It may also be explained as a sign of a lack of technological education, limited funds for computerization in museums, and late integration of technology.

The overall percentages, 80% for video and 60% for audio, are relatively close to the results (70% of most often used office software applications) in a recent IMLS technology and digitization survey. An interim analysis of the survey data was presented at the [Museum Computer Network](#) meeting in November 2001.



**Figure 2: Opportunity to watch video files.**

Overall, a high percentage of users are able to use audio and video files.



## Museum Visitation

*Do you visit a museum Web site before and/or after you go to the museum?  
Do you visit a museum's Web site even if you do not physically go to the museum?*

Falk and Dierking (2000) acknowledged that people go to museums armed with their personal agenda. They stated that the visitor's personal context is perhaps the single greatest influence on their experience. It is important for museum professionals to understand the significance of the agendas of visitors, and to recognize that they can be manipulated by the museum. Indeed, manipulation is fundamental to the museum's ability to create a successful museum experience. Do visits to a museum Web site help create this agenda?

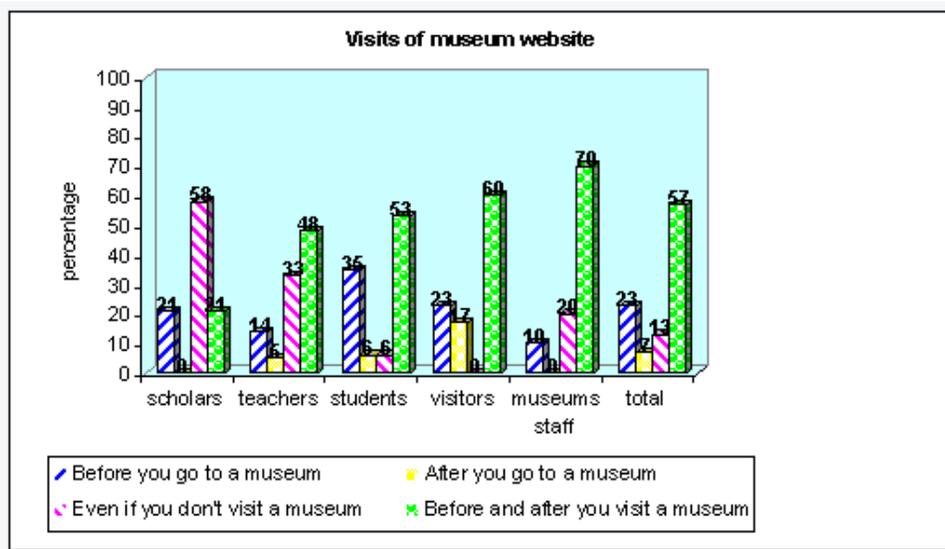


Figure 3: Visits to museum Web sites.

Most people (57%) visit museum Web sites before and after they physically visit the museum (Figure 3). Further research will be needed to understand exactly what information teachers (48%), students (53%), visitors (60%), and museum staff (57%) need before they go to a specific museum, as well as why they visit museum Web sites after they physically visit the museum. Scholars (58%) and teachers (48%) present the highest percentage of virtual visits, even if they do not physically go to the museum. It may be explained that these two audiences visit museum Web sites for research purposes.

How often do you visit museum Web sites?

The total number of people who visit museum Web sites everyday is 5% (Figure 4); this population consists of students, visitors, and museum staff. Most respondents visit museums Web sites once a month (29%) or once a semester (31%). Further analysis is needed to examine the specific needs of each of these audiences.

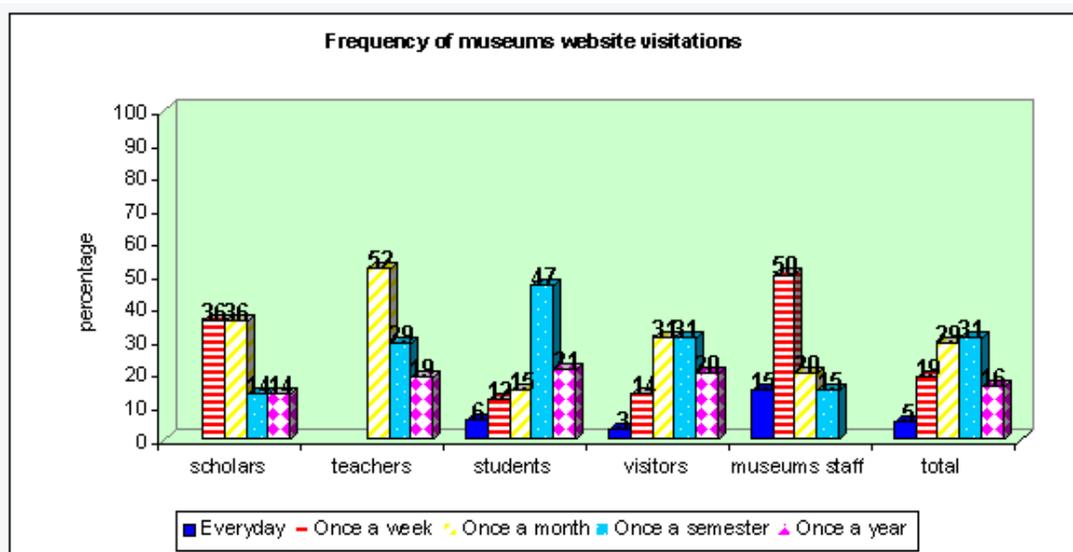


Figure 4: Frequency of museum Web site visits.



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## How Are Museum Web Sites Used?

### To search a museum collection

Visitors search museum collections for different reasons. One benefit of online searching is access to digital databases in order to be able to view remote artworks which cannot be physically accessible. New images can be created, and existing images can be juxtaposed with other images for a variety of purposes. Most research has been done evaluating the needs of art historians and art studio instructors, but has not examined the needs of teachers, students, and visitors. Many Web sites of museums merely contain marketing information. They tell the world about opening hours but rarely provide full access to collection databases, and even less frequently provide descriptive information about objects. Most museum collections are in storage, and many works are on loan to other institutions. Perhaps one definition of a "good" museum Web site is one that combines well-produced general interest information with full access to the whole collection. This survey found that 63% percent (Figure 5) of virtual visitors look forward to searching museum collections.

One of the survey respondents wrote

"... part of my job is to classify images in our digital database by their iconography. I use museum Web sites to look up information on the images that I classify - to find out who they portray, if a landscape or architecture is real or imagined, if the scene is historical, etc. ... The museum Web sites most useful for this purpose are those that tell me the story of why an artwork was made, and what the symbols in it mean, if there are any."

Historical periods, places, and people are poorly represented in many art museum collections (Miller, 1998; Passe and Whitley, 1998). Historical periods, artworks, natural resources and cultural values all become clear for museum visitors when they are presented in a series of well-organized exhibits. Virtual visitors need a context in order to understand a given art work, and this information is a priority for museum users.

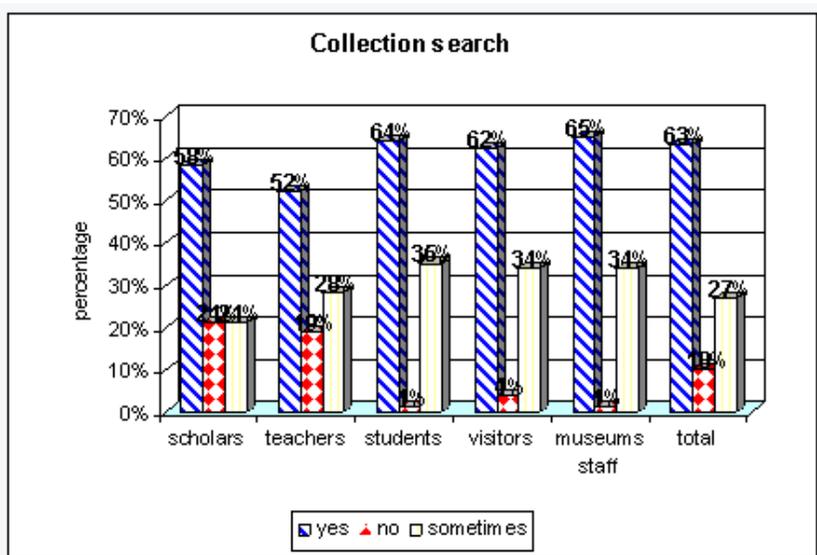


Figure 5: Collection search.

### To find information on special events in the museum

Special events in the museum include lectures on recent exhibits, workshops, gallery talks, sketching lessons, and so on. Figure 6 shows that 60% of virtual visitors are interested in special events in the museum. If we combine two answers - "yes" and "sometimes" - 87% of visitors need information about special events. Virtual visitors are looking for these events to spend their leisure time in a pleasant environment, to learn something, and perhaps to meet museum staff or artists.

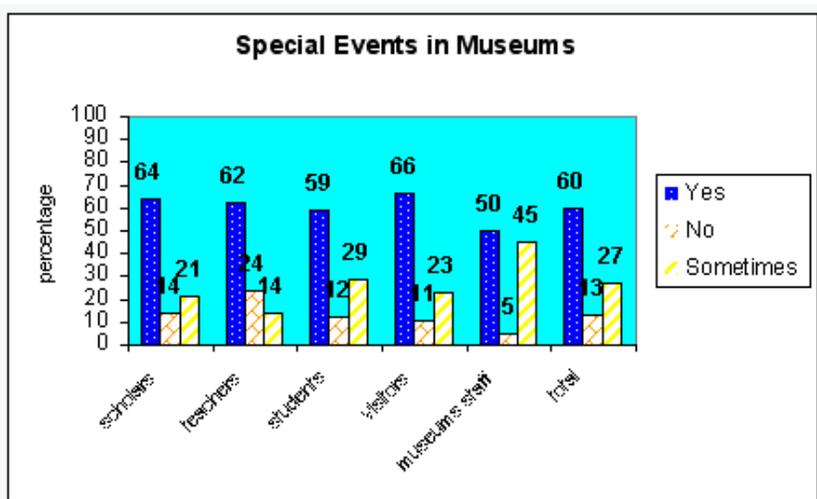


Figure 6: Special events in museums.

### To find information about recent exhibits

Recent exhibits, permanent or traveling, arouse the highest interests in visitors, museum staff, students, and teachers (Figure 7). Respondents (68%) are looking for information on these exhibits. Further research on this question

needs to examine exhibit needs: do virtual visitors need general information on the exhibit (duration, time, location, tickets prices), or are they looking for detailed information about the exhibit (what works of art are presented, how these works of art are presented, what additional information about works of art presented on the exhibit can be found on the Web, who is the creator of this exhibit)? In any case, it seems that visitors who physically visit the museum use the Web site for additional information.

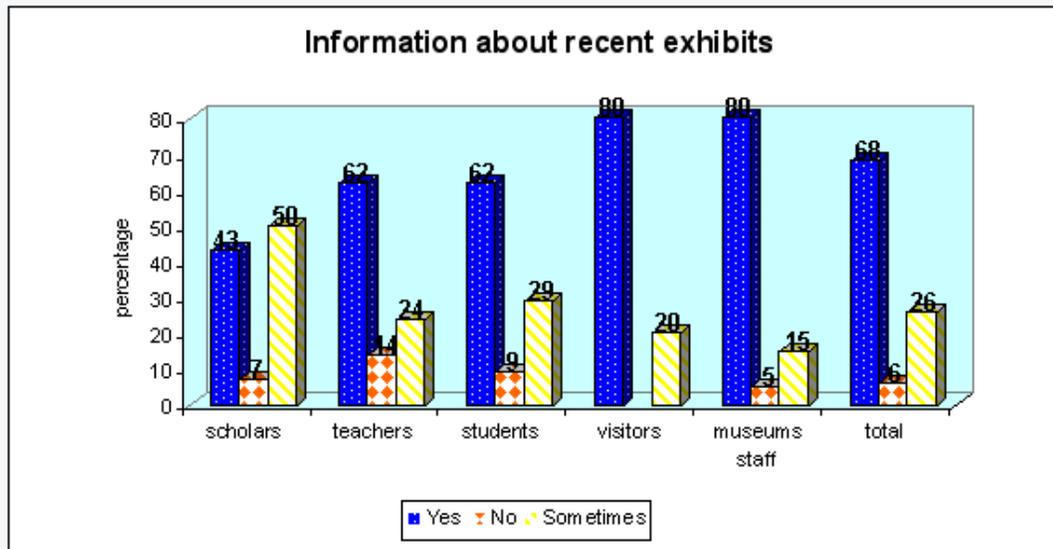


Figure 7: Information about recent exhibits.

### To do research

It is obvious from Figure 8 that teachers (62%) and museum staff (60%) examine museum Web sites for their research as well as look for additional information. Forty-eight percent of all responses indicated that museum Web sites are research sources.

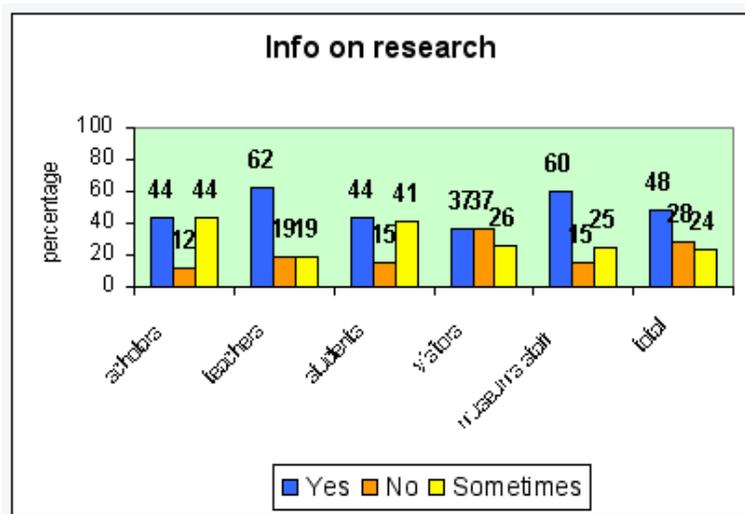


Figure 8: Research interests.

## To find an appropriate image

Images can be used for personal, educational, and commercial purposes. Forty-nine percent of respondents indicated that they are searching for images on the museum Web sites (Figure 9). The relatively high percentage of teachers (67%) points to the use of museum images for educational purposes. Further research should uncover the uses of images by other segments of the museum audience.

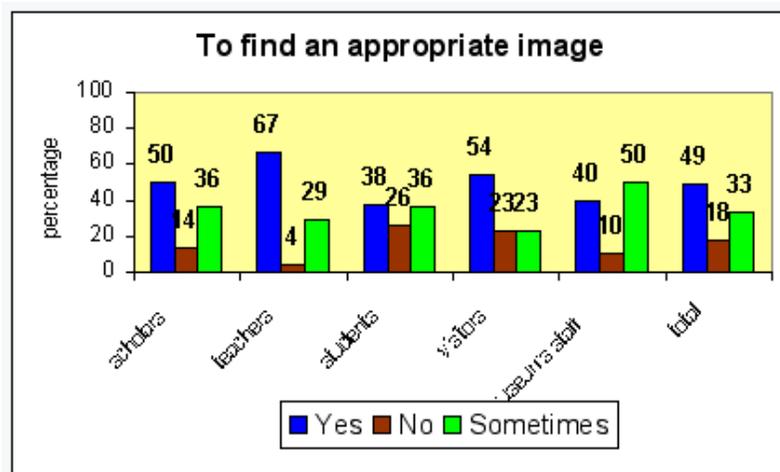


Figure 9: To find an appropriate image.

## To buy tickets and gifts

The use of the museum Web site as a conduit for ticket and gift purchases was relatively low. Overall, few museums provide e-commerce services to their customers.

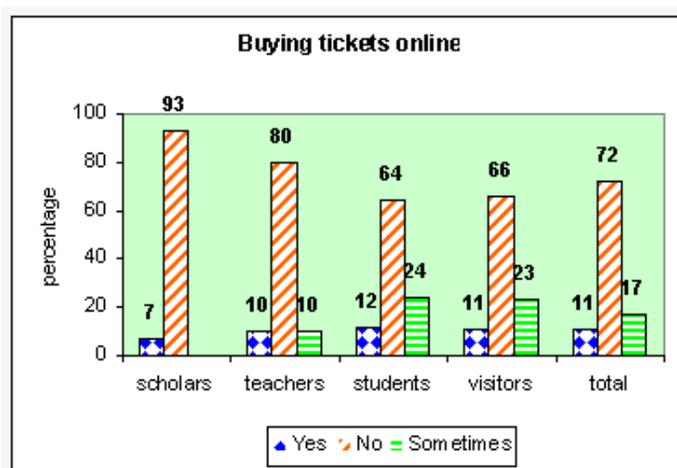


Figure 10: Buying tickets online.

Based on Chadwick (1999), visitors usually see Web sites as a vehicle to secure lower prices for tickets and gifts.

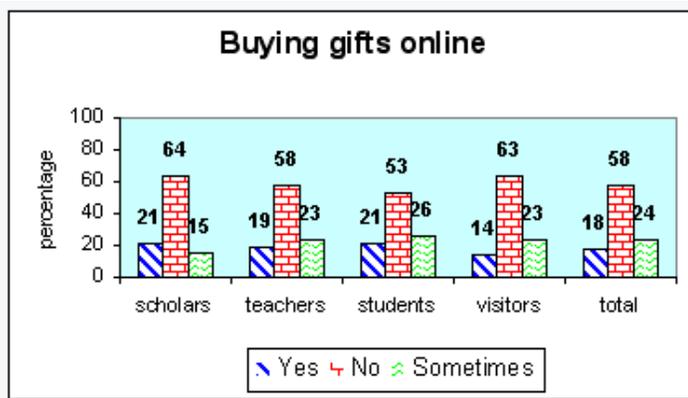


Figure 11: Buying gifts online.

## To find directions

Museum visitors need a guide to the museum itself, to exhibits, and to facilities. Most museums provide general information about their location on their Web sites, as well as printed handouts at the information desk in the museum. Virtual visitors may expect to see three-dimensional guides and maps or text providing details on moving from one exhibit space to another.

"Others want to know where their favorite art objects are located in the museum. Such information is available using touch-screens at the museum building (National Gallery in Washington, DC), but not on the Web" [4].

Figure 12 indicates that 56% of virtual visitors are looking for directions to the museum building.

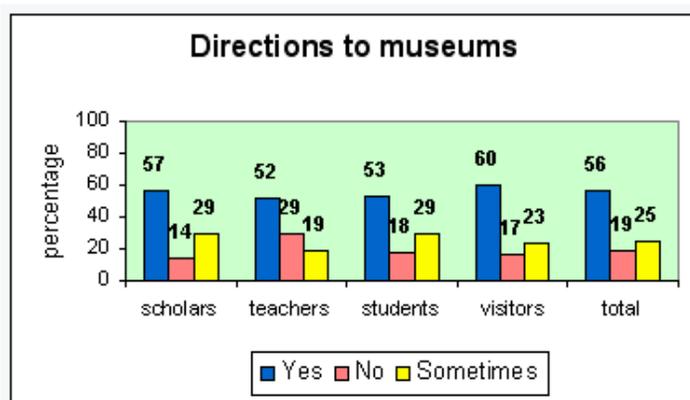


Figure 12: Museum directions.

## To find contact information

The average virtual visitor to a museum does not need a specific contact on the staff of the museum, thanks to plenty of general information about exhibits, working hours, and directions already on the Web (Figure 13). Scholars (50%) and teachers (62%), with a higher percentage of research needs, are in greater need of contact information.

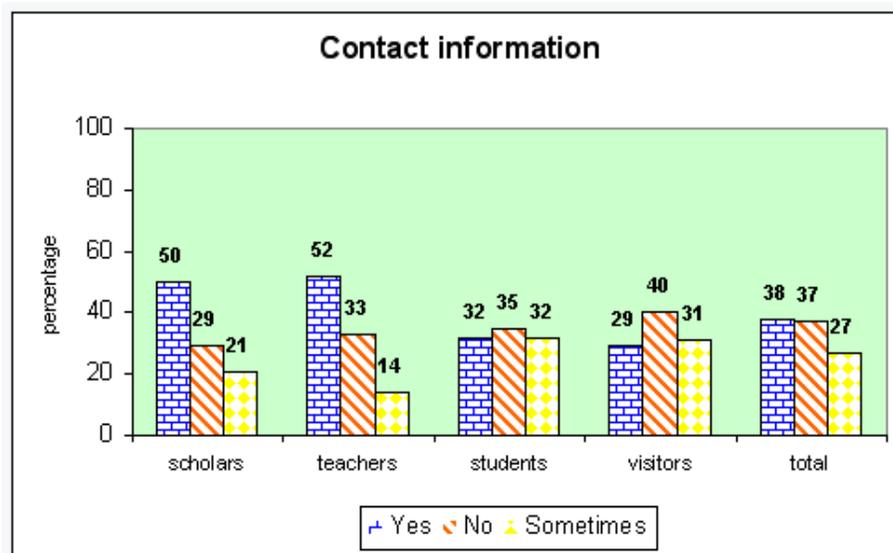


Figure 13: Contact information.

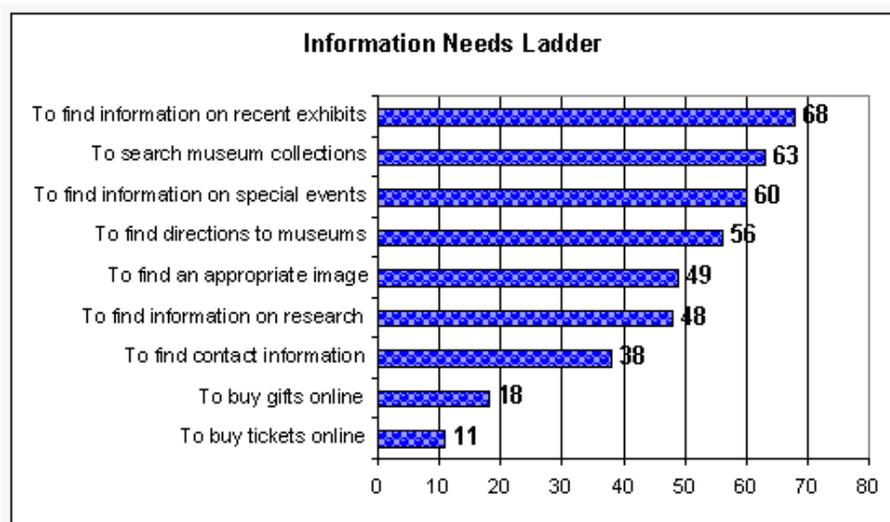


## Conclusion

This report describes the kinds of information that users seek on museum Web sites. The majority (68%) looks for information about recent exhibits (Figure 14). Further research is needed to identify what kinds of specific information is required by virtual visitors about recent exhibits.

Virtual visitors (63%) particularly value a capability to browse collection databases, to locate supplementary descriptive information. There is a need for contextual information, vivid descriptive narratives, and theory drawn from narratives.

The information collected in this survey can support database design, metadata creation, and retrieval options. Subsequent research will examine the search strategies used by the different categories of museum Web site users.



**Figure 14: Information needs.**

Information needs over special events in the museum (60%) take third place in the ranking of information needs. Further research will investigate the kinds of details needed about special events. It is still essential for visitors to find directions to the museum when they plan to visit during weekends or vacations. Additional research of information needs and needs for images share the fourth ranking place; teachers (52%) and scholars (50%) make this category significant. These two categories need further examination. Buying tickets and gifts online rank last in information needs.

From this exploratory study we know that visitors of museum Web sites come with a variety of information needs. Our next step will be to provide further details on these needs and how they can be answered via the Web. 

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## Notes

1. Falk, 1999, p. 19.

2. Stebley, 1998, p. 1.
3. Falk and Dierking, 1992, p. 136.
4. Tufte, 1997 p. 146.

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