

# Usability Test Report

## NYPL Digital Gallery

Joseph Dalton  
Cathie Toshach

Digital Library Program  
The New York Public Library  
September 2007

# Table of Contents

Executive Summary .....	1
Methodology .....	4
Performance Test .....	4
Analysis.....	5
Findings.....	6
Questionnaire Analysis .....	6
Overview of Aesthetics.....	7
Overview of Functionality .....	7
Overview of Usability.....	8
Success A: Content Rich.....	8
Success B: Visual Grammar .....	8
Success C: Multiple Search and Browse Features .....	8
Issue 1: Search Functionality .....	9
Issue 2: Labeling .....	10
Issue 3: Colors .....	11
Issue 4: Purpose & Identity .....	12
Issue 5: Layout and Blind Spots .....	13
Issue 6: Collection Guides .....	15
Issue 7: Scrolling .....	16
Issue 8: Home Page Link .....	17
Issue 9: Images as Links .....	17
Conclusion .....	18
Appendix A: Pre-Test Questionnaire.....	i
Appendix B: Post-Test Questionnaire .....	ii
Appendix C: Tasks.....	iv
Appendix D: User Summary.....	vi

## Executive Summary

Clutter is a failure of design, not an attribute of information.  
- Edward Tufte

In conducting a series of usability tests, several usability problems were uncovered and are addressed herein. The analysis of the usability test data is based on three principles: 1) effectiveness, 2) efficiency, and 3) satisfaction. The tasks utilized in the usability testing were designed to target different sections of the website in order to reveal problems or issues surrounding these principles. The problems encountered by the users were identified in terms of: 1) functionality, 2) aesthetics, or 3) usability.

Participants with various backgrounds and no prior experience using the New York Public Library's Digital Gallery website <<http://digitalgallery.nypl.org>> were solicited as users for the tests. By surveying a diverse user group, the common problems that arose were more meaningful since they were not defined by the user but more so by the system.

The results of the test revealed a number of usability problems. These problems vary as issues of function, use, and aesthetics. The following lists the problems in order of severity, with the more severe listed first:

1. Limitations in search functionality;
2. Unclear labels and color schemes confuse and misguide user behavior;
3. Ambiguity of website purpose and identity;
4. Blind spots and layout decisions can bias user behavior;
5. Collection Guides are difficult to access and are ill-defined;
6. Scrolling long lists of subjects, names, and other data creates user fatigue;
7. Home page link is not obvious and the use of additional graphics can be confusing; and
8. Although a convention, images as links are not always evident to users.

While the primary purpose of the usability tests was to discover common usability problems, a number of successes were also revealed. Participants consistently remarked about the usefulness of the content presented on the website. One user remarked, "This is definitely very useful. Before I would have sifted through folders at the Mid-Manhattan library." Another notable success was the intuitive readability of icons on the website. The strong visual grammar of the icons denoting *Printer-Friendly Version*, *Enlarge Image*, *Add to Selections*, etc. was evidenced during the usability tests as each task using these functions was immediately completed by the

users with little difficulty. Additionally, the multiple browse and search features allows for the website to be accessible to users with varying degrees of expertise. While each user displayed a preference to one type of search over another, they often used a combination of search functions in completing a given task. There were few repetitions in how users completed a task as the website provides multiple avenues for accessing the content.

## Overview

The New York Public Library's (NYPL) Digital Gallery website provides online access to primary source material from the Library's research branches. With a collection exceeding 550,000 images, users can expect to find images on just about any topic. Since the website launched in March 2005, the content has continued to expand while the interface design has remained relatively static. Managed by the Digital Library Program, a department within the NYPL's Research Libraries Administration, the website is currently under evaluation for ways in which to improve its overall usability, functionality, and aesthetic.

Through user testing and subsequent data analysis, several usability problems surfaced as common issues for both novice and experienced users. This report addresses the key usability problems that users typically experienced.

## Methodology

The primary goal of the usability tests was to gain insightful understanding into the user experience. In order to successfully complete this goal, both novice and experienced users were recruited to participate in a usability test that lasted approximately 30 minutes for each participant. A total of eight users were selected of various backgrounds.

On three separate days, patrons were approached in the lobby areas of the Humanities and Social Sciences Library and the Science, Industry & Business Library. Previously, flyers had been laid out at the information desks of each library. In an attempt to randomly select potential participants, every third patron was approached to see if they were both willing and able to conduct a 30 minute evaluation of the NYPL Digital Gallery.

## Performance Test

The usability test was designed to measure the user's ability to navigate the various resources of the website in order to complete both simple and multi-step tasks.<sup>1</sup> The test began with a preliminary introduction and assessment of the website. Participants were asked about their initial impressions of the website, whether the name "NYPL Digital Gallery" was descriptive or meaningful to them, and if anything sparked their curiosity. Users were also encouraged to briefly browse the website as a means of familiarization. The second and third tasks involved several subtasks of varying difficulty. The final task provided an opportunity for the users to reflect on their experiences.

The scenario of the second task was based on the premise that the user was writing a paper on New York City theaters. It involved several subtasks that combined to create a real world scenario of what is entailed in researching a particular subject. The task was outlined as such:

For this task imagine you are writing on the subject of theater in New York City. You want to find some images of theater buildings and play marquees that you can include along with your research.

1. Find an exterior shot of a NYC theater that predates 1950.
2. Locate a marquee for the play *Grease*.
3. Find a color photograph of the *Imperial Theater*.
4. Find an illustration depicting a theater in New York from before 1900.

The third task, which was designed to be more complex, accessed a different set of resources on the website. The task was outlined as such:

A friend, knowing what a big William Blake fan you are, tells you that there is a collection guide at the NYPL Digital Gallery that includes several of his relief etchings.

---

<sup>1</sup> Nielsen, Jakob. Heuristic Evaluation (2005). Retrieved September 17, 2007 from <http://www.useit.com/papers/heuristic/>

The first free moment you have, you get online so you can have a closer look at the materials.

1. Locate the William Blake Collection Guide.
2. Not only are you a big fan of William Blake, but dragons as well. See if you can find if there are illustrations of dragons within the collection. If there is an image of a dragon...
  - a. Locate the image record and see if you can enlarge the illustration to have a better look.
  - b. Read the line of text on the top part of the image.
  - c. Add the image to your Selections.
  - d. Return to the Collection Guide page.
3. Browse all images from the collection.
4. Find the record of the image displayed on the Collection Guide page.
  - a. From what publication is the image located?
  - b. Search to see if there are other images available from that publication.
5. Locate the holding library for the collection and find what other images come from that library.
6. You are really fond of the dragon image and decide you want a copy for yourself. Find out if you can order a print or other souvenir.

The complexity and multi-step design of this task was created so that the user would have to utilize several features of the website and navigate back and forth between a collection guide and the images it contains. Additionally, all the assigned tasks could be successfully completed in any number of ways, allowing for a more insightful understanding of search behaviors, patterns, and problems.

## Analysis

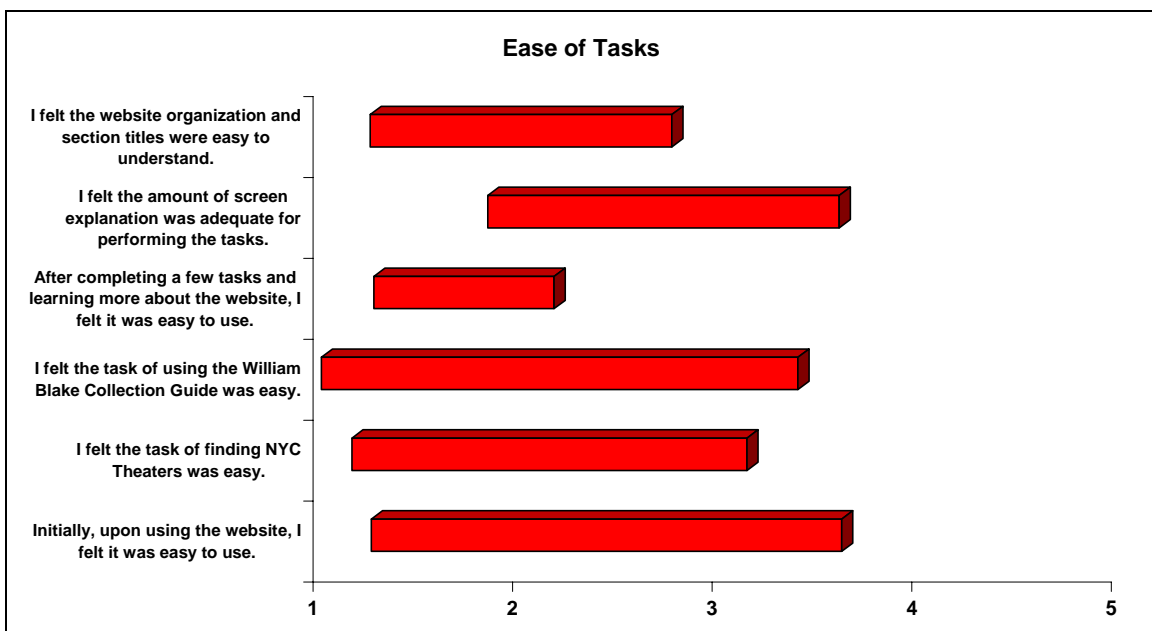
Several data capture points were utilized to gain the most complete picture available of the user experience. These data methods included: 1) a pre-test questionnaire, 2) sequential and progressively more complex tasks, 3) and a post-test questionnaire. The roles of facilitator and note taker rotated between sessions, during which the note taker would record observations of the user's behavior, comments, and other verbal and non-verbal cues. However, due to the guerilla nature of the usability sessions and other resource constraints, the tests were not recorded in any way. This restricted the opportunity for a post-session review for facial expressions, behaviors, and other interactions that may have provided an additional layer of data and understanding.

## Findings

### Questionnaire Analysis

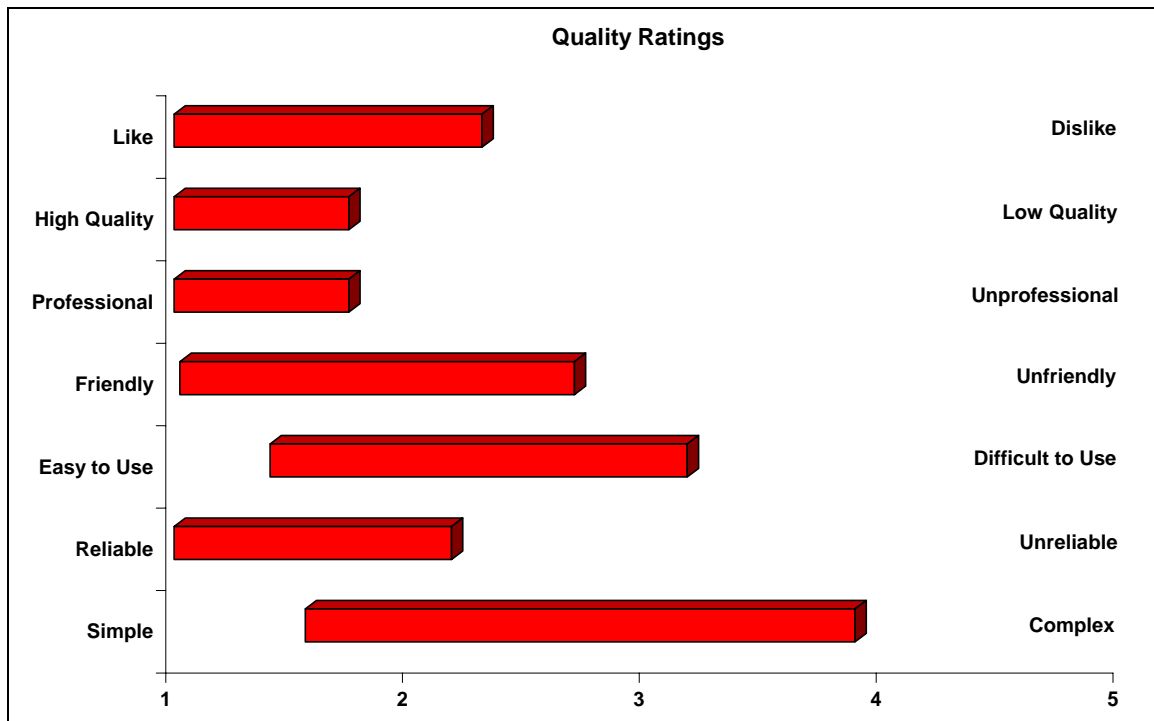
In order to better understand the participants’ various backgrounds, each was asked to complete a brief pre-test questionnaire (See Appendix A.) A total of eight participants were recruited to participate in the usability tests. Due to extenuating circumstances, the session with one user was omitted, though this in no way affects the outcome of these findings. Fifty-seven percent of participants stated that had previously used the NYPL website. Of those participants, half stated they used the website on more than 10 occasions. All participants stated they had not previously used the NYPL Digital Gallery website prior to participating in the usability test.

The following data reports the results of the post-test questionnaire in which users were asked about their feelings on both the ease of the tasks and the quality of the website. In rating the ease of tasks, five (5) is the most difficult rating whereas one (1) is the easiest. The width of the bar indicates the standard deviation of responses (i.e. longer bars mean more variable results); each bar is centered on the average response.



The questionnaire revealed the general perspective users had of the website after attempting the assigned tasks. Some aspects for improvement were revealed (see the *Quality Ratings* chart on Page 6). In general, users had a positive response to the usefulness while they found the usability of the website to be somewhat complex. A repeat of this test after implementing suggested changes would be useful in assessing the success of updates to the website.

In rating the quality of the website, users were asked to respond on a scale of 1 to 5 where five (5) relates to the most negative impression and one (1) aligns with the most positive impression. Again, the width of the bar indicates the standard deviation of responses (i.e. longer bars mean more variable results); each bar is centered on the average response.



### Overview of Aesthetics

In general, the site is not aesthetically problematic. The quality ratings chart (see above) revealed users rated the site highest in being *Professional* and *High Quality*. These attest to not only the content value and usefulness of the website, but the general consensus on appearance as well.

One user remarked that the website was bland and would prefer to have stronger colors. Impressions such as this may also be influenced by monitor quality and types of color blindness. This user also experienced trouble deciphering the different hyperlink colors for active, visited, and the hover state. Other users showed signs of struggling when looking for hyperlinks that were grey (visited) as it conflicts with the convention that grey usually denotes an inactive state. These few cosmetic changes could easily improve the site’s usability and accessibility.

### Overview of Functionality

The NYPL Digital Gallery is a content rich resource for users interested in visual materials. The ability to search and browse multiple ways works towards making this content accessible to a large and diverse audience. However, the analysis revealed that users consistently struggled with the search function. Spelling mistakes, degrees of specificity, and pluralization in query strings often returned a *No Results* page. Users’ behavior seems to be influenced by larger search engines such as *Google*, *Yahoo!*, and *AskJeeves* (now *Ask.com*), which accept natural language queries, attempt to correct spelling errors, and use a thesaurus to handle pluralization. Providing

more constructive feedback on a *No Results* page and amending the search functionality to handle common user behavior will help to reduce user frustration and improve search results.

## Overview of Usability

This aspect is most in need of improvement. As demonstrated in the post-test questionnaire, user responses leaned towards *Complex* and *Difficult to Use*. While this may seem disheartening, this area also has the potential for vast improvement by incorporating suggested solutions, some of which require little effort to implement. The most critical problems with usability were link labels (vocabulary), use and function of Collection Guides, and blind spots.

## Success A: Content Rich

### Description

Users consistently remarked that the website was interesting and useful, with one user remarking, “This is very useful actually.” Moreover, the size of the collection makes it a content rich resource that can satisfy numerous research needs. Another user, in describing a past experience in helping with a child’s class assignment, stated that s/he relied on *Google Images* in order to locate images of the 1800s. This user went on to say that the NYPL Digital Gallery would have been a better resource in satisfying that need. Additionally, the user noted the ability to conduct research “without being physically present” was an appealing attribute as s/he has a hectic schedule between work, school, and family obligations.

## Success B: Visual Grammar

### Description

In Task 3, users were asked to work through a scenario in which they were investigating the William Blake Collection Guide and its contents. During this task users were asked to: 1) add an image to their selections, 2) enlarge the image, and 3) see whether there was an option to purchase a copy. In each of these subtasks users instantly identified the required functionality. Each of these features utilizes an icon directly underneath the image. The spatial correlation and visual grammar of these features made them intuitive and accessible to the users. With users often scanning pages rather than reading them, the use of icons is a useful convention for denoting functionality.

## Success C: Multiple Search and Browse Features

### Description

The participants of the usability tests had varying degrees of expertise in online research, web technology, and historical content. One user may be strong in historical subjects but weaker in web technology and another may be a pro at surfing the web but have a limited understanding of historical topics. The website has made a good attempt at providing access to both of these skill sets through the incorporation of browse and search features. A web savvy user may tend towards using the search box while a research savvy user may use the collection guides and subject lists. Although the analysis revealed that both of these features have usability issues, they remain an effective and useful tool for accessing content in either a directed or leisurely fashion.

**Issue 1: Search Functionality**  
(Functionality)

Priority: **High**  
Implementation Difficulty: **Moderate to Difficult**

Description

One recurring problem that was revealed during the usability test sessions was the false match between user expectations and the search feature. Users consistently expected to enter natural language queries or narrow search terms and return positive matches. Instead, the specificity of the queries repeatedly returned a *No Results* page (see Figure 1). Users also tended to have misspellings and pluralization problems, neither of which was resolved by the search feature nor were alternative solutions presented by the system. The system was also unable to handle abbreviations, dates (in a meaningful way), and physical characteristics of the artifacts.

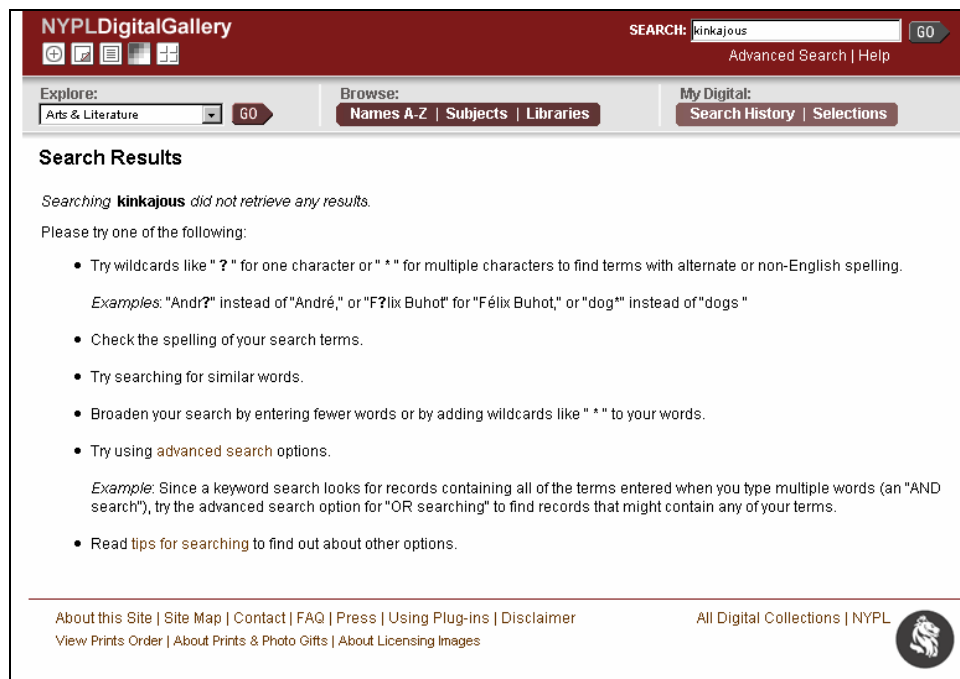


Figure 1: NYPL Digital Gallery No Results Page

## Solution

While there are likely to remain limitations on what a user can search for on the website due to metadata restrictions, there are ways in which the website can provide better feedback when an exact match is not available.

1. The search functionality can incorporate a dictionary and or thesaurus to handle common misspellings and pluralization.
2. Append the original search query to accept the “OR” statement if no “AND” statements are returned.
3. Eliminate the *No Results* page and instead provide feedback and suggestions to the user on how they may append their original search string in order to produce viable results.

Users have grown accustomed to search engines such as *Google*, *Yahoo!*, and *Ask.com*. It can now be expected that the functionality of these search engines is no longer an enhancement but an essential component in a sustainable website.

In addition to the current limitations of the search feature, users also experienced difficulty in locating appropriate solutions to tasks where the metadata was lacking. While this is a far more challenging and arduous problem to undertake, there are some other potential solutions that may help to alleviate incomplete metadata records.

1. Allow users to contribute folksonomy (tagging) to the website. For incentive purposes, users should be able to access their personal set of tags as well as the public pool. However, as an initial and experimental step, the tags could simply be pooled into one public index. This will create an added layer of information to the current metadata as well as create a meaningful bridge between user and cataloger vocabularies.
2. Create an index of synonyms that could include abbreviations (“NYC” vs. New York City), common misspellings (“theather”), and alternate spellings (“theater” vs. “theatre”). This index could be based, in part, on user tagging.
3. Provide date ranges for image records. While this would be a more data entry intensive project, it would make the search functionality and overall website usability much stronger. In the tests, all of the participants who used the search feature tried to enter a date as part of the criteria, often hitting a dead end or *No Results* page.

## Issue 2: Labeling (Usability & Aesthetics)

Priority: **High**  
Implementation Difficulty: **Easy to Moderate**

### Description

In observing user behavior during the testing sessions, it was often noted that users had difficulty with the meaning of link labels, which lead to false expectations. In some instances it was a scoping issue wherein the user was asked to find the holding library of a given item and would try to find the answer by clicking the *Libraries* link under the *Browse* navigation. In other cases, users simply didn’t understand the meaning of a label, such as “Plug-in,” “Pan & Zoom,” and

“Collection Contents.” After completing the tasks, a user remarked that the “descriptors are not intuitive.” Reflecting on the task in which the user was asked to find the publication in which the image appeared, one user stated that the “In” label “didn’t register immediately” and that it would be better to “make it more obvious.”

### Solution

Labeling both primary navigation and metadata labels to be more intuitive to users is the obvious approach. Going a step further and labeling navigation and metadata with action and goal-directed terms may prove a far more meaningful approach to users. Users who are quickly scanning the page to find their answer—and are not interested in how the record is managed or cataloged on the back-end—may find the current vocabulary difficult. Instead, using goal-directed labels will support the user in their search needs by matching well to their cognitive process. For data and links that do not lend well to action terms, use more conventional and common vocabulary rather than expert-level vocabulary. For example, *Collection Contents* could be easily replaced with *Topics*. Users did not have difficulty understanding *Related Subjects* from the Collection Guide page but often did not know what to expect when they clicked the *Collection Contents* link. Many, it can be assumed, were expecting the visual contents of the collection rather than another list of links.

Since both *Browse* and *Explore* are essentially the same action—but each provides a distinctly unique resource on the website—consider replacing *Explore* with a label that more explicitly informs users that they can locate information and groupings of topics and images from the category. (The term *Collection Guides* was not terribly meaningful to users either.)

Additionally, visually scoping the site-wide navigation and section-level navigation will help to eliminate users mistaking the former for the latter and vice versa (see Issue 5).

### Issue 3: Colors (Usability & Aesthetics)

Priority: **High**  
Implementation Difficulty: **Easy to Moderate**

### Description

The similar tone of the maroon links to the black text often made it difficult for users to discern hyperlinks. Links that had been visited turned a light grey, which gave users the impression that they were inactive (a convention for many applications). Conversely, the bold and bright gold color of the metadata labels led users to believe that they were hyperlinks as they stood in such contrast to the rest of the page content. This may also be due to the fact that the hover state for top navigation links is also a bright yellow, which users may then assume is a convention throughout the site. (See Figure 2.)

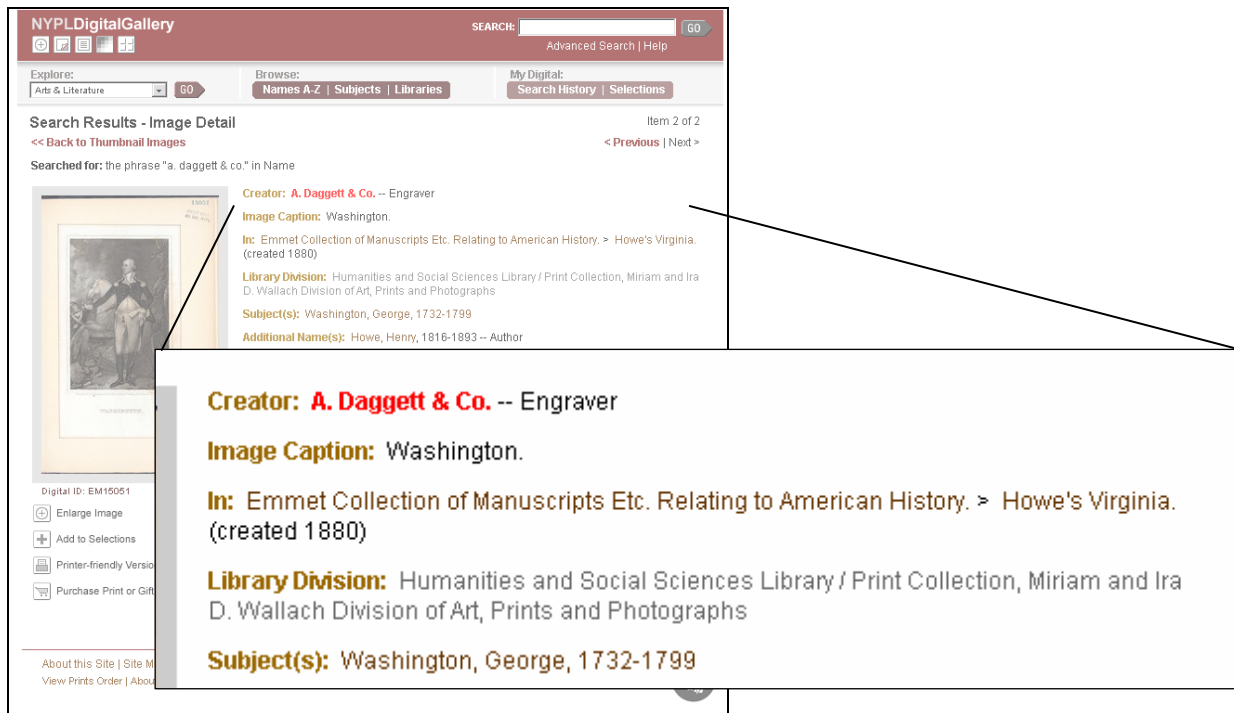


Figure 2: Example of Label and Link Colors

**Solution**

Using a hue with a more distinct tonal value will make hyperlinks “pop-out” to users. Changing the visited hyperlink to a color other than grey will eliminate users’ perception of it being inactive. Additionally, changing titles and metadata labels to a hue that has less visual impact than hyperlinks will allow users to more easily identify hyperlinks from static text. Currently, there are several colors used with text and all are visually competing for the user’s attention. Giving precedence to hyperlinks will better support search behavior by making those search paths more recognizable.

**Issue 4: Purpose & Identity**  
(Usability)

Priority: **High**  
Implementation Difficulty: **Significant**

**Description**

Often, users did not have a clear understanding of the NYPL Digital Gallery. It was unclear to users to what extent the website was useful and how it differed from the Library catalogs (LEO and CATNYP). In discussing first impressions of the website, User 8 remarked, “What is the goal? Why would I use this site?” While many of the users were able to discern that the website dealt with pictures, the usefulness of the website was not immediately clear until they had spent some time interacting with its content.

Users were also asked whether the name “NYPL Digital Gallery” was descriptive or meaningful to them. User 8 remarked that s/he didn’t see a correlation between the name and the content. With the word “digital” User 8 expected multimedia content such as music and videos and stated s/he would not have expected to find maps, posters, and other traditionally non-digital media.

Lastly, of all the participants in the usability test, none had previously heard of nor used the NYPL Digital Gallery whereas fifty-seven percent (57%) had previously used the NYPL website, including both the LEO and CATNYP online catalogs.

### Solution

Updating the home page to include examples of both the content and uses of the website will provide an immediate cue to users as to how the website could be useful to them. Use action and goal-directed vocabulary and graphics to provide examples of how the user will benefit from interacting with the website. *Flickr.com* does a good job of this by providing examples of how users can interact with the images: sharing, printing, organizing, and exploring.

Promote the website within the organization. Organizational buy-in will help to promote the website through word-of-mouth between staff and patrons. It is also likely to spawn new projects, resources, and uses for the website.

Another way to generate traffic and interaction on the website is to create learning lessons and promote the website as an academic resource to both local and national schools. Creating materials to aid teachers with curriculum as well as educate students about authority and trustworthiness with online resources will serve as a good outreach platform.

In similar fashion to the *Curator's Choice* feature, allow users to contribute projects they've created using NYPL Digital Gallery content. Featuring a project on the home page will serve as an example to other users on how they can take advantage of the rich content of the website. It will also act as a starting point in building a more interactive website, which is key to sustainability. The model of yesteryears in which websites were built as one-way informational resources is no longer adequate. Users need appropriate incentives to return to the website—brand loyalty in a sense—and this is most often accomplished by building an interaction-rich website.

The last and most difficult solution is rebranding. The terms “digital” and “gallery” will soon become dated and will no longer adequately describe the scope and content of the website. Instead, it would be helpful to find a name that is less about the media in which the content is served but about the content itself. The University of California's digital collection, *Calisphere*, has taken a dramatic approach to branding the website in a commercial, rather than academic, way. With a significant marketing and branding platform, a name such as *Calisphere* can easily take on a meaning of its own such as *Amazon.com* and *Flickr.com*.

## Issue 5: Layout and Blind Spots

(Usability & Aesthetics)

Priority: **Medium**

Implementation Difficulty: **Moderate**

### Description

From observing the behavior of the test participants it was revealed that the placement of certain key elements has had unforeseen influence on user behavior. Additionally, the general layout has created scoping issues, which affects users' expectations in their search patterns. More generally, the placement of certain elements has caused them to recede and be less likely to be used.

First, the placement of the *Explore* dropdown menu as compared to that of the search box has given it visual prominence. Users were repeatedly observed using the *Explore* menu more so because of its placement than for its functionality. Perhaps because of Western culture's mode of reading from left to right, the *Explore* menu is more easily located. Additionally, research has revealed that due to the proliferation of banner ads at the top or right of web pages, users have unconsciously begun to ignore that area of the page, which may contribute to users not utilizing the search box<sup>2</sup>. Due to the site's potentially ambiguous navigation hierarchy, the placement of "search" in the top-right corner might also cause it to be confused for NYPL-wide searching. An unambiguous, goal-driven label like "Find Images" (see Issue 2) could also help here.

Second, the website currently has three levels of navigation: 1) global NYPL navigation, 2) global NYPL Digital Gallery navigation (site-wide), and 3) navigation particular to a certain section of the website (section-level). The placement, layout, and graphics at times conflict with the navigation hierarchy. For example, when a user is on the item-level record view and they are seeking to identify the library that houses the original record, the user may mistake the site-wide navigation link, *Libraries*, for satisfying that information need. In this case the layout and graphic design are not adequately presenting the scope of the navigation hierarchy.

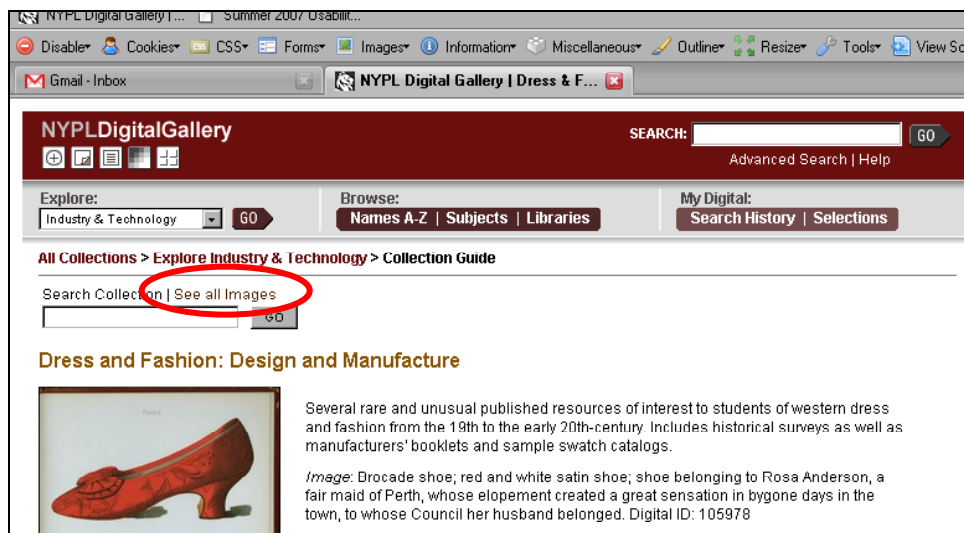


Figure 3: Example of Blind Spots

Third, the placement of links can cause them to recede from the viewer's attention. (See Figure 3.) While these links may provide access to useful tools or content, their placement causes them to be underutilized such as with the case of the *See all Images* link on the *Collection Guides*.

<sup>2</sup> Benway, Jan Panero & Lane, David M. (1998). Banner Blindness: Web Searchers Often Miss "Obvious" Links. *Internet Technology Group Newsletter*, 1.3. Retrieved September 8, 2007, from [http://www.internettg.org/newsletter/dec98/banner\\_blindness.html](http://www.internettg.org/newsletter/dec98/banner_blindness.html). and Pagendam, M., Schaumburg, H., (2001). Why Are Users Banner-Blind? The Impact of Navigation Style on the Perception of Web Banners. *Journal of Digital Information* 2.1 Retrieved September 17, 2007, from <http://journals.tdl.org/jodi/article/view/jodi-37/38>

**Solution**

In the upcoming redesign of the website it is recommended that aside from an aesthetic refresh, a great deal of attention be spent to ensure that the layout supports user behavior in an intuitive and meaningful way. Moving the search box to be more prominent and accessible will ensure that its functionality and usefulness is not undermined by its placement. Additionally, visually defining global, site-wide, and section-level navigation will help reduce the cognitive load on users in trying to ascertain the hierarchy and relationship of links. Lastly, regardless of whether the user is viewing a *Collection Guide*, *Subjects* list, or search results page, there should be consistency in the layout and organization of the page. More specifically, the placement and appearance of navigation should be uniform throughout the website to reinforce the scope, functionality, and availability of those tools and/or content for the user.

**Issue 6: Collection Guides (Usability)**

Priority: **Medium**  
Implementation Difficulty: **Moderate**

**Description**

While the *Collection Guides* are a content-rich resource, users did not have a clear sense of what the guides provided nor how they differed from an image record. Users often tried to access the *Collection Guides* in the same manner they would an image record—from the search box, *Subjects* list, or *Names A-Z* list. The value and usefulness of the guides are also undermined by their placement in related image records. Instead of being visually distinct from the other metadata, or at least brought higher up on the page, the *Collection Guides* link is located near or “below the fold” for most records (see Figure 4.)

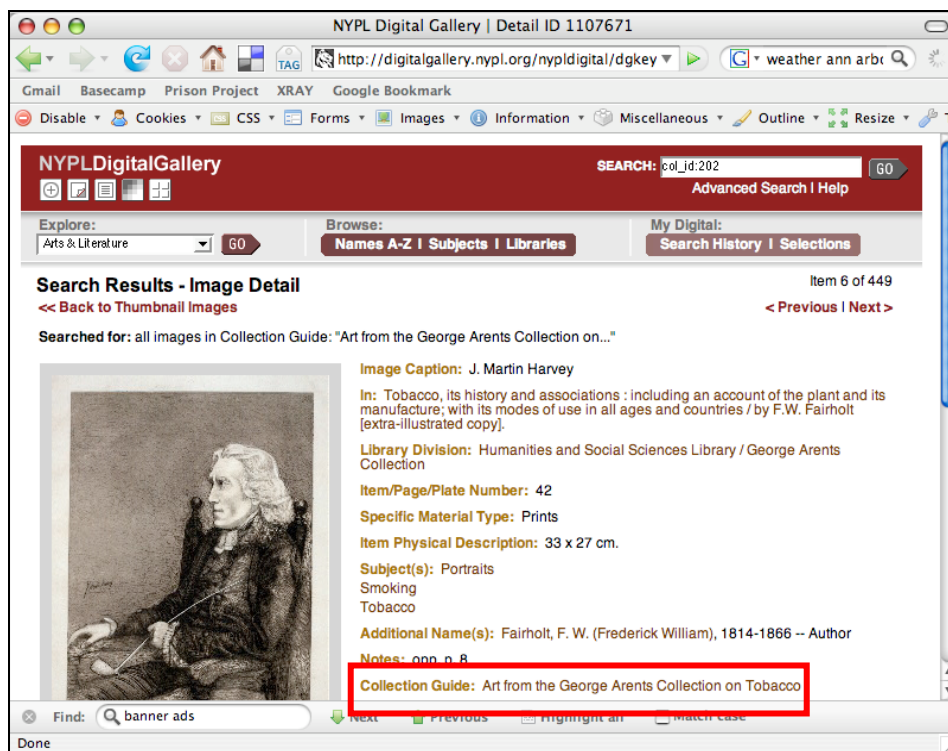


Figure 4: Collection Guide Placement on Image Record

In the case of one user, Task 3a, the organization of the *Collection Guides* made it difficult to determine under which category *William Blake* would be located. The user first thought that because *William Blake* was an illustrator that his *Collection Guide* might be located under *Culture & Society*. It was not until after prompting from the facilitator that the user was able to locate the related guide under *Printing & Graphics*. Even then, however, the user found the collection indirectly by typing in “blake william” into the *Search Collection* box and then eventually finding the *Collection Guide* link in one of the related record views.

### Solution

Beyond providing online access to images, the NYPL Digital Gallery should begin to think about the people who access the website: who they are, why they are there, and how they are using the images. In order to stay current with evolving user expectations the website should consider ways of providing additional layers of context for its visual content. The *Collection Guides* are one such solution. Using the existing guides as a launching pad, the website can begin to connect with different audiences. One such example would be to provide lesson guides and other academic resources to teachers. By promoting the guides as an important compliment to the images rather than as an afterthought, the website can begin to satisfy emerging user demands.

Functionally speaking, the website should index the *Collection Guides* along with the images so that users are able to locate them from any of the search methods, including the search box, *Subject* index, and *Names A-Z* index. Additionally, for related image records, a link to the guide should be more prominently displayed, preferably removing it from the metadata list. In order to reinforce the guides as a valuable resource, the website should distinguish images with related *Collection Guides* from others. A simple visual cue, such as an icon beneath a thumbnail on a search results page, could satisfy this need.

## Issue 7: Scrolling (Usability)

Priority: **Medium**  
Implementation Difficulty: **Easy**

### Description

The *Names A-Z* and *Subject* indexes often produce excessively long lists that cause users to scroll at length. While the size of the indexes is testament to the enormous amount of content on the website, it does make for a usability challenge.

### Solution

One relatively easy solution is to provide range hyperlinks (i.e. Ga-Gi, Go-Gr, etc.) that let users jump quickly to a particular spot in the list. Additionally, the list should periodically provide a “Back to Top” link in order to eliminate the need to also scroll up the list.

Providing a search box on the page, albeit seemingly redundant, may also help reinforce to users the association of the search box as being an alternate solution to record access. However, this may confuse users or overcrowd the page, so additional testing would be required before fully integrating this potential solution into the website.

## Issue 8: Home Page Link (Usability & Aesthetics)

Priority: **Medium**  
Implementation Difficulty: **Easy**

### Description

In observing users during the usability tests, it was revealed that users often were unclear where the home link was located. Additionally, one user was confused by the graphics under the NYPL Digital Gallery logo and expected that they would do something. During Task 3, User 8 had typed “William Blake” into the search box and upon producing no results decided to return to the home page to start over. In attempting to do so, User 8 remarked, “How do I get back to the home page?” Although the user was looking at the logo, s/he seemed confused by the icons under the name and ultimately had to be prompted by the facilitator.

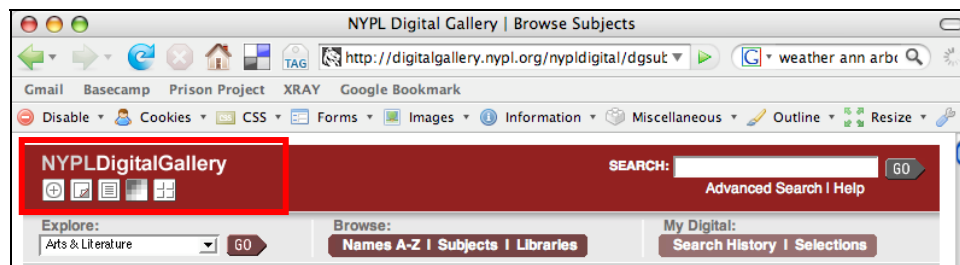


Figure 5: NYPL Digital Gallery Home Link

### Solution

Two relatively simple solutions are available for this issue. First, remove the non-functional graphics from under the NYPL Digital Gallery name. This will avoid any unintended confusion or false expectations. Second, for those users who are unaware of the existing convention to use the logo as a home page hyperlink, provide a simple text hyperlink. The latter may prove unnecessary in subsequent user testing if the former solution is implemented.

## Issue 9: Images as Links (Usability)

Priority: **Low**  
Implementation Difficulty: **Easy**

### Description

One of the more minor findings from the usability tests is the convention of images as links is not universally known or understood. While this is an issue that is likely to fade away in time, in order to make the website accessible to all levels of Internet literacy, a solution should be sought.

### Solution

Providing more feedback in the thumbnail view and record view in order to alert users that the images are hyperlinks will help eliminate any missed cues or search paths. This might include a rollover feature that triggers a state change, such as hovering *tool tips* or different colored borders. Currently, the website already provides alternate links in the thumbnail view for *View Images Details* and in the record view for *Enlarge Image*, both of which are redundant of the function the image hyperlinks perform. However, in the *Collection Guide*, the image does not provide any feedback that it leads to the image record. Being consistent in the presentation of image hyperlinks will help to reinforce this functionality to users.

## Conclusion

The NYPL Digital Gallery website is a comprehensive and unique resource for visual records. From the usability testing, participants remarked that the website was both of “high quality” and “professional,” though after completing the given tasks also noted that it was a fairly complex and somewhat difficult website to use. While it is reassuring to know the usefulness of the website and content is recognized by users, the biggest challenge going forward will be to improve the usability and functionality of the website. Addressing the nine issues addressed herein and routinely conducting usability tests to address new and recurring problems will facilitate the best possible user experience and overall sustainability of the website.

## Appendix A: Pre-Test Questionnaire

### *Pre-Test Questionnaire*

Please answer the questions below in order to help us understand your background and experience.

Name: \_\_\_\_\_

Gender:  Female  Male  Prefer not to answer

Age:  21 & under  22-34  35-54  54 & up  Prefer not to answer

State of Residence: \_\_\_\_\_

Occupation: \_\_\_\_\_

1. Reason for visiting the NYPL Research Library today:

\_\_\_\_\_

\_\_\_\_\_

2. Have you ever used the **NYPL** website prior to this activity?

Yes  No

If yes, how often do you use the website in a given month?

Less than 5 times  5-10 times  More than 10 times

What is your primary use for the website?

\_\_\_\_\_

\_\_\_\_\_

3. Have you ever used the **NYPL Digital Gallery** website prior to this activity?

Yes  No

If yes, how often do you use the website in a given month?

Less than 5 times  5-10 times  More than 10 times

What is your primary use for the website?

\_\_\_\_\_

\_\_\_\_\_

4. Please list three other online resources (websites) that you use regularly?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Appendix B: Post-Test Questionnaire

### *Post-Test Questionnaire*

Please answer the following questions to the best of your ability based on your experience with today's task. We appreciate your time and your participation will help us to better understand how we might improve the **NYPL Digital Gallery** website.

1. Initially, upon using the website, I felt it was easy to use.

Strongly Agree      Agree      Neutral      Disagree      Strongly Disagree

2. I felt the task of finding **NYC Theaters** was easy.

Strongly Agree      Agree      Neutral      Disagree      Strongly Disagree

3. I felt the task of using the **William Blake Collection Guide** was easy.

Strongly Agree      Agree      Neutral      Disagree      Strongly Disagree

4. After completing a few tasks and learning more about the website, I felt it was easy to use.

Strongly Agree      Agree      Neutral      Disagree      Strongly Disagree

5. I felt the amount of screen explanation was adequate for performing the tasks.

Strongly Agree      Agree      Neutral      Disagree      Strongly Disagree

6. I felt the website organization and section titles were easy to understand.

Strongly Agree      Agree      Neutral      Disagree      Strongly Disagree

7. Using the rating chart below, please circle the number that closely matches how you feel about the **NYPL Digital Gallery**.

Simple.....1.....2.....3.....4.....5.....Complex

Reliable.....1.....2.....3.....4.....5.....Unreliable

Easy to use.....1.....2.....3.....4.....5.....Difficult to use

Friendly.....1.....2.....3.....4.....5.....Unfriendly

Professional....1.....2.....3.....4.....5.....Unprofessional

High Quality....1.....2.....3.....4.....5.....Low Quality

Like.....1.....2.....3.....4.....5.....Dislike

8. What did you like most about the website?

---

---

9. What did you like least about the website?

---

---

10. Is there anything you expected to be able to do on the website and couldn't?

---

---

11. Is there one thing that you would like the designers to change, what is it? Why?

---

---

12. Would you recommend the **NYPL Digital Gallery** to anyone else?

---

---

13. Would you use the website again?

---

---

14. Additional comments.

---

---

---

---

## Appendix C: Tasks

### *Introduction & Tasks*

Please perform the following tasks, thinking aloud as you go, so we may better understand where the **NYPL Digital Gallery** website is performing well and where it is not.

#### Task 1: Introduction

Go to the **NYPL Digital Gallery** homepage (<http://digitalgallery.nypl.org>).

1. What are your first impressions?
2. What do you think the website is about?
3. Do you find the name, **NYPL Digital Gallery**, descriptive?
4. What sparks your curiosity? Please take a moment to browse the website and let us know what you think.

#### Task 2: NYC Theater

You are writing a paper on the subject of theater in New York City. You want to find some images of theater buildings and play marquees that you can include along with your research.

1. Find an exterior shot of a NYC theater that predates 1950.
2. Locate a marquee for the play *Grease*.
3. Find a color photograph of the Imperial Theater.
4. Find an illustration depicting a theater in New York from before 1900.

#### Task 3: William Blake Collection Guide

A friend, knowing what a big William Blake fan you are, tells you that there is a collection guide at the **NYPL Digital Gallery** that includes several of his “relief etchings.” The first free moment you have, you get online so you can have a closer look at the materials.

1. Locate the William Blake Collection Guide.
2. Not only are you a big fan of William Blake, but dragons as well. See if you can find if there are illustrations of dragons within the collection. If there is an image of a dragon...
  - a. Locate the image record and see if you can enlarge the illustration to have a better look.
  - b. Read the line of text on the top part of the image.
  - c. Add the image to your “Selections.”
  - d. Return to the Collection Guide page.
3. Browse all images from the collection.

4. Find the record of the image displayed on the Collection Guide page.
  - a. From what publication is the image located?
  - b. Search to see if there are more images available from that publication.
5. Locate the holding library for the collection and find what other images come from that library.
6. You are really fond of the dragon image and decide you want a copy for yourself. Find out if you can order a print or other souvenir.

#### Task 4: Review

Now that you've had time to work with the **NYPL Digital Gallery** website, we will take a moment to review your impressions and any ideas you may have.

1. From what you now know about the website, are there ideas you have on how you might personally use the website?
2. Is there any particular subject you might like to search for on the website?
3. Is there something you would have liked to do but were unable to?
4. What is your overall impression of the website and the content it provides?

## Appendix D: User Summary

1. Reason for visiting the NYPL Research Library today.

<b>User 1</b>	Dissertation research
<b>User 2</b>	Leisure
<b>User 3</b>	
<b>User 4</b>	To conduct research
<b>User 5</b>	(Blank)
<b>User 5</b>	Electronic PC, loan books, classes and seminars, news
<b>User 7</b>	Seek information on businesses
<b>User 8</b>	Research for thesis

2. Have you every used the NYPL website prior to this activity?

- No (3)
- Yes, 5-10 times (2)
- Yes, More than 10 times (2)

3. Have you ever used the NYPL Digital Gallery website prior to this activity?

<b>User 1</b>	No
<b>User 2</b>	No
<b>User 3</b>	
<b>User 4</b>	No
<b>User 5</b>	No
<b>User 5</b>	No
<b>User 7</b>	No
<b>User 8</b>	No*

\*User 8 verbally corrected response during the session.

4. Other online resources visited (website that you use regularly).

- Google (3)
- Bloomberg website
- ESPN website
- Yahoo.com (2)
- AskJeeves.com

- LowerManhattan.org
- Craigslist.org
- CNN
- Smithtown website
- New York Times website