WHAT CLICKS? INTERACTIVE LEARNING STATIONS (ILSS)

Background

The Minneapolis Institute of Arts initiated its plan to integrate Interactive Learning Stations throughout the museum in 1990 with the overall goal of increasing visitor effectiveness via new forms of powerful educational technology. While other art museums had installed interactive computer programs, the MIA was the first to install them immediately adjacent to the galleries. It must be stated, however, that in many cases staff were working with less than ideal spaces in a building that dates to 1912, with additions from the 70s and 90s. The overarching objective of the ILSs was to encourage visitors to connect what they learn from the programs with the actual works of art. Currently, each of the museum's 17 Interactive Learning Stations (ILSs) concentrates on a specific area of The Minneapolis Institute of Arts' permanent collection (e.g., photography, Prairie School architecture, African art, etc.). They provide detailed information about and context for works of art on display. Most ILSs are installed in discrete spaces adjacent to the galleries whose objects they address because early thinking was to avoid creating a centralized media ghetto. They range from video "jukeboxes" with a small set of linear segments to highly interactive Web programs with database components.

As in any art museum, placement of objects other than art in the galleries is a sensitive and logistically challenging task, but

from the beginning curators were involved in content development and design. While MIA staff had used a variety of research tools to guide development

Visitors using the *African Art and Culture* Interactive Learning Station

and evaluation of individual Interactive Learning Stations, the *What Clicks?* project provided the first opportunity to take a comprehensive view of all the Interactive Learning Stations and forge a plan to maximize visitor awareness, use and satisfaction.

Evaluation Approach

The *What Clicks?* project team employed a combination of means to evaluate the Institute's Interactive Learning Stations. The following surveys included a variety of measures related to awareness, use and/or satisfaction with the Interactive Learning Stations: 2001 Visitor Survey, 2002 Technology Awareness

Survey, 2002 ILS Survey, 2003 Technology Awareness Survey, 2003 ILS Survey, and the 2003 Visitor Survey. Because the Institute has so many ILSs (17 at the time of the study) the 2002 and 2003 ILS Surveys focused on two specific stations: *African Arts and Culture* and *Arts of Asia*. Consequently, most of the awareness data pertains to all ILSs; however, data related to use and satisfaction was collected only from these two Interactive Learning Stations. (Detailed descriptions of methodology are provided in the Appendix to this report.) Based on results from the 2002 surveys, the project team added another study to the original research plan, which was a focus group study to evaluate the use of small video displays (LCD's) located near works of art. Museum staff also analyzed ILS user statistics to determine trends in usage.

What We Learned about the Interactive Learning Stations in 2002

The 2002 baseline surveys revealed that the Interactive Learning Stations often go unnoticed and unused by many museum visitors. Although the primary way that ILS users became aware of the Interactive Learning Stations was direct observation, half the users said the ILSs lacked visibility. Moreover, an overwhelming majority of users said they would like to see the Interactive Learning Stations located in the galleries close to the works of art, not tucked away in corners and alcoves. The lack of awareness and use was unfortunate because once visitors found their way to the ILSs, they reported positive experiences. The surveys clearly demonstrated that the ILSs enhance the visitor's appreciation and understanding of the art.

Following are key findings in 2002:

2002 Findings Related to Awareness

- Awareness of the Interactive Learning Stations was higher than for the Museum Directory (43% vs. 35%) but far below awareness of many other aspects of the museum, including the Web site (54%).
- Most awareness came from direct observation (75%) rather than sources such as word of mouth or signage.
- Many individuals (42%) interviewed after using an ILS were not aware that there were other Interactive Learning Stations located throughout the museum.
- Half of the ILS users said the Interactive Learning Stations were "not very visible" or "easy to miss."
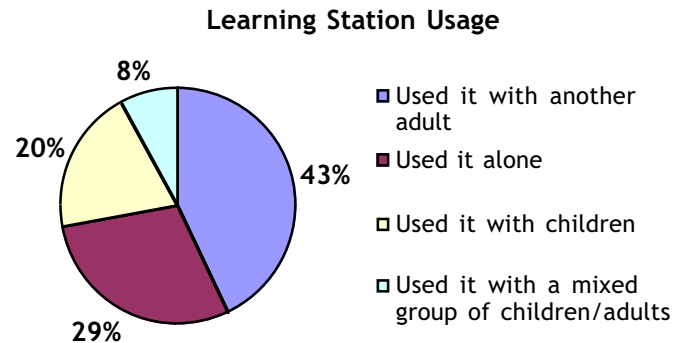
How Visible is This Computer Learning Station?

Level of Visibility	Africa	Arts of Asia	Both
Extremely visible	9%	0%	6%
Very visible	56%	25%	44%
Not very visible	32%	50%	39%
Easy to Miss	3%	25%	11%

Source: 2002 ILS Survey

2002 Findings Related to Use

- More visitors reported having used the Interactive Learning Stations (34%) than the Museum Directory (22%) on this or a previous visit.
- A desire to "learn more about works of art" was the main reason users were motivated to use the ILSs.
- More than half of the users (56%) were first time users.
- Most Interactive Learning Station users (63%) reported using the station for 5 to 14 minutes.
- Most Interactive Learning Station users reported using the station with others (71%) rather than alone (29%).

Learning Station Usage

- Used it with another adult — 43%
- Used it alone — 29%
- Used it with children — 20%
- Used it with a mixed group of children/adults — 8%

Source: 2002 ILS Survey

- Interactive Learning Station usage was higher for museum members, visitors ages 25 to 44, visitors who have more education, and more frequent visitors.
- Among visitors who were aware of the ILSs but had not used them, the primary reason was that they "would rather look at art."

2002 Findings Related to Satisfaction

As shown in the following table, very high percentages of ILS users gave the ILS high ratings on a number of variables.

	ILS Users
Overall "extremely" or "very" satisfied	70%
"Extremely" or "very" easy to use	87%
Information is "extremely" or "very" clear	82%
Learned "a great deal" or "quite a lot"	68%
Enhanced appreciation and understanding of the art "very much" or "quite a bit"	76%

A Focus on Physical Changes—When asked how the Interactive Learning Stations could be improved, most suggestions related to physical changes such as adding more seating, providing a larger screen, and improved sound quality. A key question in the baseline study probed on the issue of ILS location. Users were asked which location they preferred for the Interactive Learning Stations: right in the gallery close to the art, near the gallery, in a room separate from the galleries, or access from home via the MIA Web site. An overwhelming majority (78%) said they preferred that the Interactive Learning Stations be located *right in the gallery close to the art.*

What We Did to Enhance the Interactive Learning Stations

Armed with this information, the *What Clicks?* project team knew that their primary focus during the enrichment and redesign phase would be on making visitors much more aware of the Interactive Learning Stations and on making physical changes to enhance the user experience. Due to high visitor satisfaction, there appeared to be little need for enhancements to computer program content.

> ### Major ILS Changes
>
> Made all 17 ILSs more visible
>
> Improved seating, lighting, sound, and screen sizes
>
> Behind-the-scenes changes to improve reliability

Enrichment and Redesign Team—The *What Clicks?* project team created an interdepartmental team focused on the redesign of the MIA's Interactive Learning Stations that included representatives from Education, Curatorial, Marketing, and the Interactive Media Group. The team recognized that representation from the Curatorial Department was essential because the department has the ultimate responsibility for placements within the galleries and many physical changes to the ILSs were required. Although the Interactive Learning Station user survey had focused on only two of the stations (*African Art and Culture* and *Arts of Asia*) it was apparent that there were numerous opportunities to make other Interactive

Learning Stations more visible and physically more usable for museum visitors. The team made a critical decision to expand their enrichment and redesign efforts to all Interactive Learning Stations in the museum, and by the end of that phase, all 17 Interactive Learning Stations had been improved in some way. Another early decision by the team was to test and evaluate the use of short videos on small LCD screens located next to specific works of art, because Interactive Learning Station users overwhelmingly said they wanted the stations "in the galleries, close to the works of art."

Audit and Redesign Plan—The team began by conducting a physical audit of all Interactive Learning Stations with an eye to the visitor preferences suggested by the baseline research. Aspects of the stations that had previously seemed adequate now appeared unsatisfactory. Many were poorly lit; signage was inconsistent; some had insufficient seating. Always, the team approached its work with an eye to the many things that could enhance ILS visibility, even if only to accelerate the speed of an attract loop.

Originally displayed on a small computer monitor, the *Malagan Art of New Ireland* video is now shown on a state-of-the-art 40-inch plasma display.

Physical Changes to the Interactive Learning Stations—In all cases, the team increased lighting in the Interactive Learning Station areas and installed consistent signage to help draw visitors' attention to them. Other changes involved faster machines and larger monitors.

Following is a list of the types of changes that were made to some or all of the Interactive Learning Stations:

➢ Added more lighting to all
➢ Installed consistent signage
➢ Recast as interactive DVD presentation or as video theater
➢ Updated interface
➢ Added closed captioning
➢ Added seating
➢ Created animated attract loops
➢ Installed new sound systems
➢ Added music as an attractor
➢ Replaced small computer monitor with 40" plasma display
➢ Repositioned screen to be more visible from the gallery
➢ Installed new attract loop or increased speed of existing one
➢ Installed holder in every ILS, for rack cards that listed all 17 museum locations

African Art and Culture and Arts of Asia—The project team decided early on that no significant changes would be made to the *African Art and Culture* Interactive Learning Station because the station had all the positive attributes that visitors said they wanted in an Interactive Learning Station. The *Arts of Asia* Interactive Learning Station, on the other hand, was positioned in a small alcove off the gallery with the screen completely out of sight for any visitors in the gallery. The team decided to improve the *Arts of Asia* ILS with new, updated

equipment, additional seating and by moving the equipment within the alcove so that it faces the gallery and is visible from the gallery itself.

A screen visible from the galleries and enhanced lighting invite visitors into the *Arts of Asia* ILS installation.

Behind the Scenes—While some Interactive Learning Station enhancements may be noticeable to the user, others will not be because the changes focus on ways to streamline the work that museum staff and others must do to ensure their smooth operation and reliability. These efforts included the installation of a new proxy server to speed up delivery of Web-based content, faster processors for multi-media presentations, and conversion of some video material to DVD to increase reliability. The ILSs run with two types of programs, closed system multimedia and Web-based.

Results of the *What Clicks?* Effort

A description of evaluation results must be prefaced by a brief explanation of the research limitations for the ILS evaluation. Although the *What Clicks?* team decided early in the enrichment and redesign phase to improve *all* the ILSs, the baseline user surveys in 2002 had focused only on the two Interactive Learning Stations originally designated for evaluation, *African Art and Culture* and *Arts of Asia*. In addition, sample sizes were relatively small due to unexpectedly low visitor traffic during the 2002 evaluation period. A third limitation of the data is that no changes were made to the *African Art and Culture* ILS because the project team concluded that *African Art and Culture* has all the attributes of the ideal ILS. Thus, it is not surprising that researchers found it somewhat difficult to detect statistically significant differences between the 2002 and 2003 ILS User Survey data. Nonetheless, researchers were able to draw the following conclusions about results.

2003 Results Related to ILS Awareness—The many visibility enhancements undertaken by the project team for all ILSs led to a fairly dramatic increase in Interactive Learning Station awareness from 43% to 53% in 2003 (significant @ .99).
- While awareness of other museum elements also increased, few were as dramatic as for the Interactive Learning Stations.

Awareness

	2002	2003	Difference ('03 vs. '02)
Library	34%	32%	-2%
Directory	35%	44%	+9%
INTERACTIVE LEARNING STATIONS	43%	53%	+10%*
Arts magazine	52%	54%	+2%
Web site	54%	59%	+5%
Events such as Art in Bloom	63%	64%	+1%
Member events	64%	69%	+5%
Arts Break coffee shop	72%	79%	+7%*

Source: 2002 and 2003 Technology Awareness Surveys (total unaided and aided awareness) *Significant @ .95 or better

- The effort to boost Interactive Learning Station awareness through an article in the museum's members magazine appeared to have a modest impact in that the percentage of visitors who became aware of the ILSs increased from 0% to 4% (significant @ .95).
- The team's efforts to make the *Arts of Asia* Interactive Learning Station more visible resulted in measurable improvements. The percentage of ILS users who found it to be "extremely" visible rose dramatically from 0% to 13% and the percent of people who said the station was "easy to miss" declined from 25% to 9% (significant @ .95).

- Among users of both ILSs, there was a dramatic increase in perceived visibility, with 55% reporting the ILSs to be "extremely or very" visible in 2003 vs. 50% in 2002.
- As of the time of the follow-up user survey, the percentage of ILS users who were aware of other Interactive Learning Stations in the museum remained unchanged (57% in 2003 and 58% in 2002).

How Visible Are the *Arts of Asia* and *African Art and Culture* ILSs?

	2002	2003	Difference
Extremely visible	6%	17%	+11%
Very visible	44%	48%	+4%
Not very visible	39%	33%	-6%
Easy to miss	11%	2%	-9%

Source: 2002 and 2003 Interactive Learning Station Surveys

2003 Results Related to ILS Use—As noted previously, there are limitations to the conclusions that may be drawn from the ILS user data due to small sample sizes and a change in approach from the original study design. Following are the 2003 results:
- Reported use of any Interactive Learning Station on a *previous* museum visit increased from 34% to 37% but the difference was not statistically significant. [The 2003 MIA Visitor Survey conducted three months later (November 2003) identified a dramatic increase in the percentage of visitors who reported that they used and ILS on their current visit (28%) vs. only 9% in the 2001 Visitor Survey.]

- There was a slight increase in users who used an ILS with children and a decline in the number who used it with another adult (significant @ .95).
- The percentage of people who used the ILS because they wanted to "stimulate a child's interest in the museum." increased from 16% in 2002 to 27% in 2003 but the difference did not meet tests of significance.
- Approximately half of ILS users continued to be first time users, unchanged from 2002.
- There were no significant changes in duration of Interactive Learning Station use, with most users reporting that they used the station between 5 and 14 minutes.

2003 Results Related to ILS Satisfaction—Few statistically significant differences were found between 2002 and 2003 on many measures of ILS satisfaction, in part due to the limitations described above. The following measures, while unchanged, remained high:

	2002	2003
"Extremely" or "very" satisfied	70%	71%
"Extremely" or "very" easy to use	87%	84%
"Extremely" or "very" clear information	82%	87%
Learned "a great deal" or "quite a lot"	68%	72%
Enhanced understanding and appreciation of the art "very much" or "quite a bit"	76%	77%

Source: 2002 and 2003 Interactive Learning Station Surveys

Efforts to improve ILS sound quality were successful in that a smaller percentage of users recommended that the sound quality be improved, 3% of users in 2003 vs. 12% in 2002 (significant @ .95).

ILSs Close to the Art—Two findings from the 2003 surveys continued to support the team's earlier decision to test small LCD monitors located close to works of art:

- The percentage of ILS users who prefer that stations be "located right in the gallery close to the art" remained very high, 85% in 2003 and 78% in 2002, though the change from one year to the next did not meet tests of statistical significance.

Which Location Do You Prefer?

	2002	2003	Difference
Located right in the gallery close to the art	78%	85%	+7%
Located near the gallery	13%	11%	-2%
Located in a room separate from the galleries	6%	3%	-3%
Prefer to have access at home via the MIA Web site	3%	1%	-2%

Source: 2002 and 2003 Interactive Learning Station Surveys

- The percentage of people who want the information "tied closely to specific works of art in the gallery" increased significantly.

How Should the Information Relate to the Art?

	2002	2003	Difference
Would like both specifics and general/background information	53%	54%	+1%
Want information tied closely to specific works of art in the gallery	24%	36%	+12%*
Want general/background information about the kind of art in the gallery	23%	10%	-13%*

Source: 2002 and 2003 Interactive Learning Station Surveys
* Significant @ .95

Design of the LCD Focus Group Study

Because visitors were asking for more thorough integration of media materials in the galleries, the project team moved quickly to design and execute a study of small video screens with focused content and in direct proximity to works of art. The screens are quite different from the ILSs in that they are much smaller, have very focused content, are not interactive, and generally provide context related to a specific work or small group of works of art. The purpose of the study was to answer the question: Can video content enhance the visitor's experience of specific works of art without detracting from the art itself, and, if so, how? In addition to gauging overall

A video loop was created from material in the *Restoring a Masterwork* ILS and made available through an experimental, small-format LCD display.

visitor satisfaction with the videos, their reactions to issues such as sound, types of art, location, duration, interactivity, and text were also explored. (For a full report, see A Focus Group Study of Visitor Reaction to Small-Scale Interpretive Video Displays in the Galleries, June 2003)

The team identified six different opportunities for installing the videos, using existing or newly acquired content, and commissioned a research firm to conduct three visitor focus groups to evaluate them. Each group included 7 or 8 visitors, lasted approximately 2 1/2 hours, and consisted of gallery visits and discussion breaks at the Institute during regular museum hours. Participants were recruited at random from MIA member and nonmember visitor lists. One group included participants who frequently visited the MIA as well as other museums and could be viewed as "art savvy." The other two groups included more mainstream visitors. A total of 23 individuals participated in the focus groups, and each received a $50 honorarium for his or her participation.

Respondents in these focus groups described numerous ways that the videos contributed to their understanding, appreciation and enjoyment of their gallery experience.

After arriving at the museum entrance, participants were escorted into a room for a few minutes of orientation. Initially they were not told that the subject of the study would be the video screens; instead, they were asked to visit the galleries as they normally would and make note of their general impressions. Focus group facilitators then took the visitors in groups of 3 or 4 to view three galleries with small video monitors. Afterward the two subgroups came together for a discussion of the experience, at which time the purpose of the study was explained. They then visited three additional examples, followed by a second joint discussion, for a total of six video monitors visited during the 2 1/2 hour session. Each session concluded with a general discussion of the visitors' overall impressions of the technology.

Cincinnatus consultants Diane Herman (far left) and Pam Johnson (taking notes) conduct a focus group at the museum regarding experimental LCD screens in the galleries.

LCD Focus Group Study Results

Following are the key conclusions from the LCD focus group study:

➤ The presence of small video displays in the galleries can enhance the visitor's understanding and appreciation of the works of art. Respondents in these focus groups described numerous ways that the videos contributed to their understanding, appreciation and enjoyment of their gallery experience.

➤ Importantly, the video displays, as developed for this study, did not detract from the visitor's experience of the works of art. Only a small number of visitors noticed the video screens upon entering their first gallery. They tended to come upon the screens in the normal course of visiting the room or failed to notice them entirely until prompted by the focus group moderator. When asked whether the videos detracted from their gallery experience, very few said they were distracted.

➤ In some cases, the video displays filled what visitors described as a gap between the more general information provided by museum signs (e.g., Art of Japan) and the labels for specific works of art, creating a mid-level contextual piece that greatly enhanced the visitor's understanding of the works of art in the room.

➤ Though the number of respondents was small, it appeared, based on these focus groups, that the 'art savvy' visitors felt that they, too, benefited significantly from the videos.

➤ Most respondents agreed that the soft, culturally appropriate music that accompanied videos in some galleries greatly enhanced their experience in the gallery and contributed to their interest in spending time there. On the other hand, visitors also said they would not want sound present in every gallery. In general, broadcast audio was preferred over headsets because it allows the visitor to move freely within the gallery and allows for a shared experience.

➤ Although the duration of the videos varied significantly, from 45 seconds (*Transformation Mask*) to 4 minutes (*Immaculate Conception*), visitors reported that all seemed

appropriate for the specific application. Longer videos seemed particularly appropriate when they told a story.

➢ Screen size varied somewhat, depending on the specific application and clarity of the video image; however, in general, the 6-inch size was viewed as too small. The 10-inch size used in one example (*Taking Tea*) was not considered too large for that application.

➢ Continuous play was preferred over the "touch here to begin" format. The visitors said they might be reluctant to touch-start a screen for fear that the video would be too long, or because they were mindful that it would be a shared experience. In addition, they advised against a blank screen, which may go unnoticed by visitors or cause them to think it may be broken.

➢ A restart button was recommended for longer videos, and some indication of subject and sequence length was recommended for all videos.

➢ The question of density of small video displays in the museum was an open one based on the focus groups. Respondents strongly endorsed the video concept for situations that lend themselves to this form of interpretation as demonstrated in the six examples shown to them. On the other hand, they urged some measure of restraint in the use of videos and sound, so as to not overwhelm the museum with technology. Videos should be an *option* for visitors to the museum, they said, and decisions about when to include them should be made on an individual basis with that in mind.

Interactive Learning Station User Statistics

For the traditional Interactive Learning Stations, MIA staff have tracked user statistics for many years, and the *What Clicks?* project provided an opportunity to incorporate these data into the overall analysis. Staff record monthly "touchtotals" which indicate the number of user sessions for each ILS and analyze them statistically. For the *What Clicks?* analysis, touchtotals were compared from year to year, pre- and post-study.

As of this writing, the data suggest that ILS usage remained steady during the *What Clicks?* study period. However, since little time has elapsed since the changes were made to the ILSs, the project team is confident that future monitoring will prove that higher visibility will lead to increased ILS use. The analysis of touchtotals did reveal that the more visible the individual Interactive Learning Station, the greater the visitor use.

Future Directions for the Interactive Learning Stations

It is important to point out that when museum staff make choices regarding programs in the museum, they are not thinking solely about those who walk into the museum. Sometimes, the content is designed for the Web or for development of a CD ROM, with some overlap with the ILSs. While a great deal was learned about awareness, use and satisfaction of ILSs through this research, museum staff feel it

is important to not look too narrowly upon the work that has been done. In many cases, there are multiple audiences for the content. For example, programs such as *Arts of Asia*, *Modernism*, and *Unified Vision* are accessible online as well as in the galleries.

The Arts of Asia ILS is available both in the galleries and online at www.artsmia.org/arts-of-asia/ — including an in-depth view of the Institute's renown Chinese collections.

Work to improve the Institute's Interactive Learning Stations will continue long after the *What Clicks?* project comes to a close. When opportunities arise for relocation and redesign in the galleries, the lessons learned from the Interactive Learning Stations research will continue to guide decisions. As in the past, the guiding principle for ILS content will be to "show what can't be shown in person in the gallery," e.g., the object's use, process of creation, original setting, related works of art, comparative works of art, documentation, while articulating meaning or cultural relevance. Importantly, the direction set by the *What Clicks?* research will continue to inform the many decisions that will be made as the MIA proceeds to design a major expansion slated for completion in 2005.