

[Multiphased Assessment- cont'd from page 4]  
measures of display text, attracting power of displays,  
and knowledge gain in relation to certain display types.

### Results and Discussion

Visitors randomly selected to take the test upon entering (170 persons) scored 48% correct, while those taking the same test at exit (160 persons) scored 56% ( $p < 0.0$ ). Greatest knowledge gains were in relation to questions answered on the very first panel at the entrance to the visitor center: What is an estuary? Why are estuaries important? Why is Old Woman Creek an estuary? Why preserve Old Woman Creek? What are the problems of estuaries? Exit knowledge scores were related to amount of time spent in the visitor center, but no other demographic variables were consistently related. Displays having text with pictures were the source of items that achieved the highest increase in scores on the exit test.

The reading level and attracting power of displays varied greatly within the center although all the displays were designed and implemented by the same group of individuals. It appeared that placement of the displays had as much to do with their ability to attract and hold attention as did any other attributes.

Attitude differences between entry and exit indicated that visitors had acquired a greater feeling for the importance of estuaries and a greater willingness to be involved in protection.

Administration of the questionnaire by computer, while initially intriguing to participants, tended to slow the progress of the survey. The computer program could not respond quickly to answered items, producing the next item without delays. It therefore took nearly twice as long for participants to complete the computer version even though it was identical to the paper and pencil form.

□

## INTERPRETING AND EVALUATING WITH MICRO-COMPUTERS

Harry Searles  
Director, Educational Services  
Ohio Historical Society

Use of micro-computers to present basic cultural concepts and to assess visitor learning has been underway this year at the Ohio Historical Society in Columbus. When the Society decided in 1983 to renovate its 13-year-old archaeology exhibits, the planning team under the direction of Martha Otto, curator of archaeology, chose to focus on a humanistic approach -- emphasizing the universal basis of culture as a response to human

needs and stressing comparisons between modern and historic societies.

An advisory team of university professors and curators from other museums was assembled to suggest methods for infusing more humanism into the exhibits. They recommended development of an orientation exhibit using micro-computers to accomplish three tasks:

1. to assist visitors with the cognitive development of some important cultural concepts;
2. to allow visitors opportunities to interact with artifacts, and
3. to measure what visitors knew about the content of the exhibit before they entered.

The group also advised that a second set of computers be installed as an exit exhibit to:

1. provide information about Ohio's current native American population, and
2. measure what visitors knew as they left the exhibit.

### The Programs

Four computer programs were developed, three for the orientation exhibits and one for the exit exhibit. The orientation programs deal with the concept of physical, social and spiritual needs. Visitors were asked questions about objects that are in cases in front of the computers. The questions help the visitors construct generalizations about the objects and their relationships to specific human needs. These generalizations establish a frame of reference for viewing artifacts in the main exhibits as cultural responses to human needs.

In addition to its interpretive function, each program records all visitor responses to each question. These responses provide the museum staff with some demographic information, but more importantly, they can be used to measure learning through comparison with visitor data at the exit exhibit.

### Results

One result of the micro-computer experience is that the Society staff, as well as the visitors, are learning. The extensive archaeology exhibit, "The First Ohioans," opened in September, 1986, and data collecting started in April, 1987. Data analysis, which began in May, showed that refinements were necessary. Impediments were identified as: flaws in the programs that contaminated the data, a significant number of visitors not finishing the somewhat lengthy programs, and visitors casually trying out a micro-computer.

On the positive side, this information allowed the staff to make improvements. The data collection flaws were eliminated and all of the programs were shortened. Because such changes can be made easily without disrupting or closing the exhibit, this process can serve as  
[cont'd on next page]

[Micro-Computer - cont'd from page 5]

a perpetual mode of formative evaluation.

Although the programs are still evolving, some general assessments have been made. Based upon observational measurement practices commonly accepted for exhibit evaluation, the use of micro-computers for interpretive purposes has been successful. Large numbers of visitors have spent lengthy periods of time viewing the objects in the orientation cases and interacting with the computers.

In terms of evaluating learning, the results have not been as gratifying. Although this project commenced with high hopes for using data from all visitors, it appears that too many variables may be present for computers to be as effective as desired. It now seems more plausible to conduct controlled studies with a variety of groups, and to extrapolate appropriately from those results.

In conclusion, the use of micro-computers as interpretive and evaluative devices in "The First Ohioans" has been instructive for both museum visitors and professional staff. □

## EVALUATION OF AN ESTUARY VISITOR CENTER OUTREACH PROGRAM

April C. Lahm and Rosanne W. Fortner  
School of Natural Resources  
Ohio State University

Schoolchildren make up an important part of visitation to many types of museums and nature centers. The visitor center at Old Woman Creek National Estuarine Research Reserve (on Lake Erie, near Huron, Ohio) has one of the most developed educational programs of the 17 national estuarine reserves. Since the other reserves are just beginning to develop outreach programs for school visitors, an evaluation of the Old Woman Creek program could serve as a model for other reserves.

To evaluate the program schoolchildren receive when they visit Old Woman Creek, several research questions were addressed. Among these were:

1. Does a change in knowledge of the schoolchildren occur when they participate in the program? If so, when does this occur?
2. Does a shift in attitude occur when the children visit the center?
3. Do the children enjoy their visit and what part do they enjoy the most?

### Procedure

The students (N=201 fourth and fifth graders from 10 classrooms) who were to visit Old Woman Creek were first given a written test containing knowledge questions about facts and concepts presented in exhibits at the center, and attitudinal questions. They then saw a slide presentation at their schools, given by Old Woman Creek personnel. This was followed by a two-week unit planned by Old Woman Creek personnel and presented by their classroom teachers. Next, they visited the center, where they completed a scavenger hunt designed to take them through the exhibits, did a laboratory exercise, and finally were led on a trial walk to the actual estuary. Two weeks later, a second test was administered to them in their schools. A comparison group (N=35) of fifth grade students from the area was given a pretest and posttest but no treatment. In addition, some of the students in the treatment group were tested after completion of their unit but before the visit to the center.

### Results

A significant ( $\alpha = .05$ ) change in knowledge did occur, with the students' scores averaging 34 % on the pretest and 58 % on the posttest. Most of this increase occurred before the visit to the estuary. The students were especially able to answer questions from specific areas addressed in the scavenger hunt. The comparison group showed no significant change from pretest to posttest. A positive shift in attitude did occur, but this was not significant for all classroom units. The majority of the children enjoyed their visit to the center, with 46 % of them mentioning the walk to the actual estuary as their favorite part of the visit. The next highest response to this open-ended question: 13 % enjoyed looking through microscopes.

### Conclusions

Based on the results, this school visitor program designed by the personnel at Old Woman Creek did help the children gain knowledge about the estuary. Although most of the knowledge gain took place within the classroom, the most enjoyable part of the experience was the walk to the actual estuary. An alliance between school staff and estuary personnel can be a valuable method by which to impart important information about special environmental areas to schoolchildren. □

### Subscription rates increase again!

Starting this fall, subscription rates to *Visitor Behavior* have increased from \$6.00 per volume to \$8.00. This increase should help alleviate our budget deficit and increase the number of pages in each issue.