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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

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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. □

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