associated with features of the setting (e.g., Ittelson, Rivlin, & Proshansky, 1970).

Other methods. Indirect measures (erosion techniques like worn pathways in the grass; leftover techniques such as pieces of litter) are occasionally used. In addition, photos and video/ audio recording are often used.

Self-Report Methods

Self-report methods include such techniques as questionnaires, interviews, focus group methods, and rating scales. Self-report methods by their very nature are "reactive" since the visitor knows he/she is being treated in a special way. Visitors may try to be "helpful" by exaggerating the pleasure of their experience or telling the interviewer what he/she thinks is expected. Any good textbook on research methodology in the social sciences will describe the pros and cons of self-report (e.g., see Marans, 1975). Also, see Loomis' (1987) chapter on the use of visitor surveys and Hood's (1986) paper.

Questionnaires. These are paper-and-pencil devices used to assess factual information and/or attitudes.

Interviews. Visitors are asked questions and their answers carefully recorded.

Focus groups. This technique uses a directed interview with small groups who are carefully chosen to represent some segment of a population of potential or actual users.

Rating scales. This method attempts to force respondents to rate the strength of cognitive or affective reactions to some aspect of the environment (e.g., physical feature, staff friendliness).

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Visitor Evaluation: What Is It?

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There are many concepts and issues related to evaluation discussed in the visitor studies literature. This article is a brief summary of some of these issues as I see them.

Research vs. Evaluation

Many writers (Friedmann, Zimring, & Zube, 1978; Patton, 1987; Screven, 1988) have made a distinction between "research" and "evaluation." Others (e.g., Loomis, 1988) see evaluation as a specific form of research. Below is a summary of some of the distinctions made by those who argue research and evaluation are distinct. [These distinctions are not universally accepted. I am among those who see little difference between research and evaluation.]

- Research attempts to control extraneous factors, while evaluation attempts to describe these factors.
- Research is concerned with discovering the causes for behavior; evaluation is concerned with factors that influence behavior.
- Research aims to reduce the number of factors; evaluation examines complex systems.
- Research uses rigorous methodology; evaluation is less formal.
- Research uses quantitative, statistical analysis; evaluation is more likely to be qualitative.
- Research requires highly trained professionals; evaluation can be conducted by those who have less training and knowledge.
- Research is expensive and time consuming; evaluation can be carried out quickly and inexpensively.

While these distinctions can be made in extreme cases, there are many studies (e.g., Loomis, Fusco, Edwards, & McDermott, 1988) that seem to serve both purposes.

Formative vs. Summative Evaluation

Formative evaluation attempts to assess an exhibit or program midway and use these results to improve the exhibit/program. Thus, in museum/zoo exhibits, formative evaluation involves obtaining input (direct observation, self-reports) from visitors and using the input to improve the impact of the exhibit on the visitors. Formative evaluation is usually carried out during the planning and development of new exhibits, although it can be used to make improvements on already existing exhibits also. Screven (1975; 1986; 1988) has been among the leaders in advocating the use of formative evaluation in visitor studies. Inexpensive mock-ups are usually used during formative evaluation.

Summative evaluation has different purposes: identification of what works and doesn't work for future exhibits; evaluation of cost-effectiveness; and decision-making on whether or not an exhibit should be replaced or changed in the future. Summative evaluation is generally focused on installed exhibits. It evaluates the extent to which an exhibit/program is meeting its objectives, without attempting to build-in improvements.

Goal-Free vs. Goal-Referenced Evaluation

This distinction refers to whether or not evaluation is designed to answer specific objectives. Goal-referenced evaluation (e.g., Screven, 1975) is based on measurable outcomes that are specified before evaluation begins. Goal-free evaluation (e.g., Wolf, 1980) attempts to be open to unexpected behavioral or attitudinal effects. Screven argues that there is a place for both types of evaluation. Goal-free evaluation is useful during initial stages of a project to obtain information upon which to formulate goals and objectives. While there may be specific learning objectives for an exhibit, visitors may react in unexpected ways and these reactions are an important element of evaluation.

Developmental vs. Post-Design Evaluation

Developmental evaluation is carried out while the exhibit is being developed. This phase is an ideal time for formative evaluation (evaluation that uses visitor reactions to improve its impact). Post-design evaluation, on the other hand, would be carried out after the exhibit has been installed. In the field of architecture, post-design evaluation is usually called "post-occupancy evaluation" (POE).

Qualitative vs. Quantitative Evaluation

This distinction usually emphasizes the difference between a statistical versus nonstatistical approach to data analysis. The quantitative approach would summarize the results in terms of average scores, distribution of scores, etc. A qualitative approach would describe what people might say or do but would not provide numerical analysis of the results. In the extreme, both approaches are problematic. Descriptive statistics fail to capture the variety and richness of human responses. On the other hand, a complete lack of quantitative description makes it difficult to see the orderly patterns of behavior that are evident when behavior is measured by numbers.

Front-End Evaluation

This term refers to the evaluation of plans, ideas, and concepts for a proposed exhibit or program. It is used to establish goals and objectives of a project.

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