

Part Four

Administrative Issues for the Distance Instructor

Strategies for determining the effectiveness of a distance education program are described.

Evaluating Teaching and Learning at a Distance

Michael R. Simonson

The best way to find things out is not to ask questions at all. If you fire off a question, it is like firing off a gun—bang it goes, and everything takes flight and runs for shelter. But if you sit quite still and pretend not to be looking, all the little facts will come and peck around your feet, situations will venture forth from thickets, and intentions will creep out and sun themselves on a stone; and if you are very patient, you will see and understand a great deal more than a person with a gun does [Huxley, 1982].

This marvelous quote from Huxley's *The Flame Trees of Thika* (1982) illustrates a metaphorical rationale for a major refocusing of procedures for evaluating distance education systems. Traditional evaluation models have concentrated on the empirical and quantitative procedures that have been practiced for decades (Stufflebeam and Shinkfield, 1985; Worthen and Sanders, 1987). More recently, evaluators of distance education programs have begun to propose qualitative models that include the collection of many non-numerical types of information.

This chapter discusses two approaches to distance education evaluation. First, Woodley and Kirkwood's (1986) summary of evaluation procedures will be discussed. Second, the AEIOU approach to evaluation developed by Fortune and Keith (1992), Sweeney (1995), and Sorensen (1996) will be explained. The purpose of reviewing these approaches will be to provide a foundation for evaluating distance education programs.

It is important to differentiate between theory-based research and evaluation. Hanson and Maushak (1996) have provided an excellent review of distance

education literature, including research on and about distance education. Hanson summarizes distance education research as follows:

Distance education is just as effective as traditional education with regard to learner outcomes.

Distance education learners generally have more favorable attitudes toward distance education than traditional learners do, and distance learners feel that they learn as well as nondistant students.

The research clearly shows that distance education is an effective method for teaching and learning (Hanson and Maushak, 1996).

Evaluation, as contrasted to research, is the systematic investigation of the worth or merit of an object. Program evaluation is the systematic investigation of the worth of an ongoing or continuing distance education activity (Joint Committee on Standards for Educational Evaluation, 1994). This chapter discusses procedures for evaluation that assist in the improvement of the practice of distance education or that determine the worth of distance education activities. Additional information related to evaluation and distance education is available in Cyr and Smith, 1990; Willis, 1994; Fitz-Gibbon and Morris, 1987; Worthen and Sanders, 1987; and Rossi and Freeman, 1993.

Alternative Evaluation Philosophies

Program evaluation at the Open University of Great Britain is considered to be the systematic investigation of the merit of a particular distance education program, curriculum, or teaching method and how it might be improved compared with alternatives. As part of evaluation procedures for distance education by the Open University (Woodley and Kirkwood, 1986), two alternative strategies have been merged. The first is the traditional approach, which attempts to apply the rules and procedures of the physical sciences to evaluation. The second is a more eclectic view of evaluation that incorporates qualitative and naturalistic techniques.

The traditional strategy normally includes an experiment to determine the effectiveness of a distance education project. The project is structured from its beginning with the requirements of the evaluator in mind. Carefully matched samples are picked, controls are established, and variables are selected for which comparison data will be collected. Next, objective tests of variables are selected or constructed. Data are collected before, during, and always after the instructional event or procedures. The evaluator then takes the data and prepares the evaluation report, which is submitted weeks or months later.

Recently at the Open University and elsewhere, a countermovement to this method has emerged (House, 1986). In this countermovement, evaluation activities are incorporating more naturalistic methodologies with holistic perspectives. This second perspective for evaluation uses focus groups, interviews,

observations, and journals to collect evaluation information in order to obtain a rich and colorful understanding of events.

From a practical standpoint, most evaluators now use a combination of quantitative and qualitative measures. Certainly, there is a need to quantify and count. Just as certainly there is a need to understand opinions and hear perspectives.

Categories of Evaluation Information

According to Woodley and Kirkwood (1986), six categories of evaluation information can be collected about distance education activities:

1. *Measures of activity.* These measures are counts of events, people, and objects, often available from administrative records. Activity questions are ones such as

- How many courses were produced?
- How many students were served?
- How many potential students were turned away?

2. *Measures of efficiency.* Efficiency questions, also frequently available from administrative records, asked are

- How many students successfully completed the course?
- What was the average student's workload?
- How many students enrolled in additional courses?
- How much did the course cost?
- How much tuition was generated?

3. *Measures of outcomes.* Measures of adequate learning are usually considered the most important measures of outcomes of distance education activities. Often interviews with learners are used to supplement course grades in order to find students' perceptions about a distance learning activity. Mail surveys are also efficient ways to collect outcome information from distant learners. Other outcome measures include documenting the borrowing and use of courses and course materials by other institutions as an indicator of effectiveness and the enrollment by students in additional, similar courses as indicators of a course's success.

4. *Measures of program aims.* Some distance teaching programs specify their aims in terms of what and whom they intend to teach, and evaluation information is collected to establish the extent to which these aims were met. One common aim of distance education programs is to reach learners who otherwise would not be students. Surveys of learners can be used to collect this type of information.

5. *Measures of policy.* Evaluation in the policy area often takes the form of market research. Surveys of prospective students and employers can be used to determine the demand for distance education activities.

Policy evaluation can also include monitoring. Students can be surveyed to determine whether tuition is too high, whether appropriate courses are being offered, and whether there are impediments to course success, such as the lack of access to computers or the library.

Sometimes policy evaluation can be used to determine the success of experimental programs, such as those for low achievers or for those who normally are not qualified for a program. The purpose of policy evaluation is to identify procedures that are needed or that need changing and to develop new policies.

6. *Measures of organizations.* Sometimes it is important to evaluate a distance education institution in terms of its internal organization and procedures. Evaluators sometimes are asked to monitor the process of course development or program delivery to help an organization be more efficient. This category of evaluation requires on-site visits, interviews, and sometimes the use of journals by key organization leaders.

These six categories of evaluation are not used for every distance education activity. Certainly, some modest evaluation activity is almost always necessary. It is important that the activities of evaluators be matched to programmatic needs. Woodley and Kirkwood (1986) have summarized evaluation in distance education as being a fairly eclectic process that utilizes procedures that should match program needs to evaluation activities.

The AEIOU Approach

Recently, Fortune and Keith (1992), Sweeney (1995), and Sorensen (1996) have proposed the AEIOU approach for program evaluation, especially the evaluation of distance education projects. The effectiveness of this approach has been demonstrated during its use in evaluating the activities of the Iowa Distance Education Alliance, Iowa's Star Schools Project (Simonson and Schlosser, 1995b; Sorensen, 1996), a four-year statewide distance education activity. Additionally, the model has been used to evaluate a number of other innovative projects such as the Iowa Chemistry Education Alliance (1995) and the DaVinci Project: Interactive Multimedia for Art and Chemistry (Simonson and Schlosser, 1995a).

The AEIOU approach is similar to Woodley and Kirkwood's in that it is an eclectic one that uses quantitative and qualitative methodologies. It has two primary purposes as an evaluation strategy. First, the model provides formative information to the staff about the implementation of their project. Second, it provides summative information about the value of the project and its activities.

The AEIOU evaluation process provides a framework for identifying key questions necessary for effective evaluation. Some evaluation plans use only

parts of the framework, while other, more comprehensive plans use all components. Presented next are examples of evaluation questions asked in comprehensive distance education projects.

Component 1: Accountability. Did the project planners do what they said they were going to do?

This is the first step in determining the effectiveness of the project and is targeted at determining whether the project's objectives and activities were completed. Evaluation questions typically center on the completion of a specific activity and often are answered yes or no. Additionally, counts of numbers of people, things, and activities are often collected.

Questions such as the following are often asked:

- Were the appropriate number of class sessions held?
- How many students were enrolled?
- How many copies of program materials were produced, and how many were distributed?

Methods used: Accountability information is often collected from project administrative records. Project leaders are often asked to provide documentation of the level of completion of each of the project's goals, objectives, and activities. Sometimes evaluators interview project staff to collect accountability data.

Component 2: Effectiveness. How well done was the project?

This component of the evaluation process attempts to place some value on the project's activities. Effectiveness questions often focus on participant attitudes and knowledge. Obviously, grades, achievement tests, and attitude inventories are measures of effectiveness. Often raters are asked to review course materials and course presentations to determine their effectiveness, and student course evaluations can be used to collect reactions from distance education participants.

Examples of questions to determine effectiveness include

- Were the inservice participants satisfied with their distance education course?
- Did the students learn what they were supposed to learn?
- Did the teachers feel adequately prepared to teach distance learners?

Methods used: Standardized measures of achievement and attitude are traditionally used to determine program effectiveness. Surveys of students and faculty can be used to ask questions related to perceptions about the appropriateness of a project or program. Focus groups (Morgan, 1988) also provide valuable information. Finally, journals are sometimes kept by project participants and then analyzed to determine the day-to-day effectiveness of an ongoing program.

Component 3: Impact. Did the project make a difference?

During this phase of the evaluation, questions focus on identifying the changes that resulted from the project's activities, and they are tied to the stated outcomes of the project. In other words, if the project had not happened, what of importance would not have occurred? A key element of measurement of impact is the collection of longitudinal data.

Impact is extremely difficult to determine because determinants of impact are difficult to identify. Often evaluators use follow-up studies to determine the impressions made on project participants, and sometimes in distance education programs learners are followed and questioned by evaluators in subsequent courses and activities.

Questions might include

- Did students register for additional distance education courses?
- Has use of the distance education system increased?
- Have policies and procedures related to the use of the distance education system been developed or changed?

Methods used: Qualitative measures provide the most to the evaluator interested in program impact. Standardized tests, record data, and surveys are sometimes used. Also, interviews, focus groups, and direct observations are used to identify a program's impact.

Component 4: Organizational Context. What structures, policies, or events in the organization or environment helped or hindered the project in accomplishing its goals?

This component of evaluation has traditionally not been important, even though evaluators have often hinted in their reports about organizational policies that either hindered or helped a program. Recently, however, distance educators have become very interested in organizational policy analysis in order to determine barriers to the successful implementation of distance education systems, especially when those systems are new activities of traditional educational organizations, such as large public universities.

The focus of this component of the evaluation is on identifying those contextual factors that contributed to, or detracted from, the project's ability to conduct activities. Usually these factors are beyond the control of the project's participants. Effective evaluation of organizational context requires the evaluator to be intimately involved with the project in order to increase awareness of the environment in which the project operates.

Questions typically addressed in evaluating organizational context include

- What factors made it difficult to implement the project?
- What contributed most to the success or failure of the project?
- What should be done differently?

Methods used: Organizational context evaluation uses interviews of key personnel, focus groups made up of those affected by a program, and document analysis that identifies policies and procedures that influence a program. Direct participation in program activities by the evaluator is also important. By participating, the evaluator is confronted directly with the organizational context in which a program exists and can comment on this context firsthand.

Component 5: Unanticipated Consequences. What changes of importance happened as a result of the project that were not expected?

This component of the AEIOU approach identifies unexpected changes that occurred as a result of the project. Effective evaluators have long been interested in reporting anecdotal information about their project or program. It is only recently that this category of information has been recognized as important. Often evaluators, especially internal evaluators who are actively involved in the project's implementation, have many opportunities to observe successes and failures during the trial-and-error process of beginning a new program. Unanticipated consequences of developing new or modified programs are a rich source of information about why some projects are successful and others are not. Central to the measurement of unanticipated outcomes is the collection of ex post facto data.

Examples of questions asked include

- Have relationships between collaborators changed in ways not expected?
- Have related, complementary projects been developed?
- Were unexpected linkages developed between groups?
- Was the distance education system used in unanticipated ways?

Methods used: Interviews, focus groups, journals, and surveys that ask for narrative information can be used to identify interesting and potentially important consequences of implementing a new program. Often, evaluators must interact with project participants on a regular basis to learn about the little successes and failures that less sensitive procedures overlook.

Conclusion

As distance education in the United States increases in importance, evaluation will continue to be a critical component of the process of improvement. Eclectic models of evaluation such as the ones advocated by Woodley and Kirkwood (1986) and Sweeney (1995) are most applicable to distance education program evaluation. Evaluators should use quantitative and qualitative procedures. Distance education programs should be accountable to their goals, should be at least as effective as alternative approaches, and should have a positive impact. Evaluators should attempt when possible to identify what organizational context supports effective distance education systems, and unanticipated events should be shared with interested readers. . . . If you are very patient, you will see and understand.

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