1982

Learning Outcomes: The Measurement and Evaluation of Experimental Learning

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MN01060

NSEE

Resource Paper

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National Society for Experiential Education

PANEL Resource Paper #6

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THE MEASUREMENT AND EVALUATION OF EXPERIENTIAL LEARNING

by John S. Duley

The focus of this paper is on measuring and evaluating the learning acquired by students in field experience education, not on program evaluation. This paper serves as an introduction and supplement to the books listed on the last page. One of these, EFFICIENT EVALUATION OF INDIVIDUAL PERFORMANCE IN FIELD PLACEMENT, is provided as part of this PANEL Resource Paper.

Measurement and evaluation are two steps in a six-step process called assessment[1] and need to be discussed in that larger context. These six steps are identifying the learning, articulating it with the rest of the learner's program, documenting, measuring, evaluating, and transcribing or recording it.

Identifying what is to be learned

The first step is to determine what is to be learned for which college credit is to be given. This is more difficult in experiential education than in a didactic situation. For example, the unplanned-for learning opportunities in a field placement may be more significant than what was identified prior to its beginning, or the learning opportunities that were anticipated may not materialize. In short, the instructor is not in control of the learning environment. Also, parts of the learning that takes place may not be appropriate for college credit. There are three basic ways to identify the learning:

a. Develop learning objectives that clearly state the knowledge or skills expected to be demonstrated as the end products of the experience, the conditions under which they will be demonstrated, the level and the stability of performance required (e.g., "The student will be able to diagram the organizational components of the agency and explain orally the relationahip of these components. The diagram and explanation must be judged 90% accurate by the supervisor and consistent with the textbook use of the terms authority, responsibility, departmentalization, and communication by the faculty member. The diagram must include all positions, and both the drawing and explaining must be accomplished in one hour.").

b. Design learning activities and reporting procedures that you are confident will assure the acquisition of the learning expected. In the National Center for Service-Learning publication, The Service-Learning Educator,[2] a "learning plan" is recommended; this is an example of this second way of identifying learning. The author states, "Because the service-learning experience is unique for each student, a way must be found to help students plan and monitor their own learning . . . The student specifies what he or she hopes to accomplish, the activities to be carried out, and how the accomplishments will be demonstrated." The instructions for completing the sample Service-Learning Agreement are:

> Please describe below your learning objectives (e.g., 'Understand the rights of tenants and available means of redress'), the methods you will use to achieve your learning objectives (e.g., 'Research in libraries, interview lawyers, talk with community people and agency staff who have had success in the area'), and the evidence you will use to show you have achieved your objectives (e.g., 'List of books read, records of interviews; as a final project, a paper summarizing project's efforts, results and future recommendations').[3]

This process for planning and conducting learning activities is very similar to the process designed by Keith Lupton in the Off-Campus Program of the University of South Florida which he calls the "Project-Syllabus Method." In both of these examples, the emphasis is on the activities to be engaged in, and the learning is evaluated by the faculty members much as it is in the classroom when special projects or reports are assigned. In the service-learning example, "understand" is a broad educational goal rather than a learning objective because it does not lend itself to the same precision of measurement as "diagram," "list," "define," or "explain orally;" but it does allow for the uniqueness of the learning opportunities of various placements to be accommodated through the broadness of the goal and the use of expert judgment by the professor in measuring and evaluating the learning that has been accomplished.

c. Identify broad educational and/or personal development goals or competencies, familiarize the students with these before departure, require the students to work consciously at developing them, and provide a means of structured reflection on and reporting of the results of their efforts. Such a

list of broad developmental goals might include the following:

Information source development - the ability to use many sources of information within a social environment. The student should development information-gathering skills such as observing, questioning associates and chance acquaintances, and listening with care.

Cultural and environmental understanding - awareness and understanidng of the physical environment, the structures (power and social), and the people's values, feelings, attitudes, and lifestyles in another environment.

Interpersonal communication - A person should listen well and speak clearly, and also be sensitive to nonverbal communication, i.e., the messages available from physical movements, facial expressions, and the quality of face-to-face encounters.

One such structured means of reflection and reporting is the Performance Analysis Report described in Appendix B of College-Sponsored Experiential Learning.[4] Journals and logs utilizing specific reporting methods are also used for such structured reflection and reporting.

A program may identify the learning to be acquired by using either learning objectives, a learning plan, skill and competency development, or any combination of these three methods. The critical thing to remember in order for measurement and evaluation to be valid and reliable is that some means of identifying the learning for which the student will be held accountable must be built into the program design.

Articulating the learning

The second step in sound assessment practice is articulation--determining where and how this particular learning experience fits into the overall program of the student. Providing good articulation will answer such questions as: What does this learning opportunity build on? How does it provide opportunities for applying and reinforcing previously acquired knowledge and skills? What previous learning is it dependent on? What is it leading into? How can it be used to prepare for future learning?

Documenting the learning

The third step in assessment is to document the learning during the placement. This requires that the student clearly know both what learning is expected and what documentation is acceptable and required. The student collects evidence to present to the faculty member upon his or her return from the field that will demonstrate the student's knowledge and skills. Such evidence will be used in the evaluation process and might include evaluations from supervisors, peers, and clients; work samples; research projects done for the employer; journals; logs or other forms of self-assessment; photographs; video or audio tapes; newspaper stories or summary report of work and learning. This process of documentation is very similar to the artist's development of a portfolio. For beginning professionals in any field, it is a good practice to develop such a portfolio of concrete evidence of skills and knowledge. Students should be provided with descriptions and examples of different types of documentation, the functions they serve, and how they should be presented. A distinction must be made between evidence of experience and evidence of learning.

Measuring and Evaluating the learning

Steps four and five are difficult to separate and are the central focus of this paper. Measurement involves the determination of what and how much has been learned. Evaluation is the determination of whether that learning is equivalent to the credit hours designated for that course (Does the student pass or fail?) and the quality or level of the learning demonstrated by the assignment of a letter or numerical grade according to a predetermined set of standards.

Important guidelines for these processes have now been developed and are explained in Warren Willingham's book Principles of Good Practice in Assessing Experiential Learning. Excerpts from this resource are given here as examples of some of the primary principles to follow[5]:

> Assessment of experiential learning should employ measurement methods that fit the character of the learning. (Comment: Some learning experiences develop competence in a specific well-established subject area, in which case a standard appraisal

technique like an objective test may be appropriate and desirable. Much experiential learning, however, is characterized by different learning outcomes for different individuals. In this case, more holistic methods of expert judgment are required to determine the nature and level of individual learning outcomes. These include product assessment, interviews, oral examinations, simulations, essays, performance assessment, work checklists, etc.)

Measurement should be, in itself, a useful learning experience for the student. (Comment: Whenever possible, the assessment process should be an integral part of the learning process. It is important that assessment goals be reflected in the learning activity and that learners understand the nature of the assessment process and what function it serves. An appreciation of the purpose of assessment helps to reinforce a sense of the individual's responsibility for her or his own learning and a sense of mutual accountability with the faculty. Improved self-awareness and better understanding of the techniques of self-assessment are important learning outcomes of assessment and can serve the student in later life. Thus, assessment should be perceived partly as instruction and partly as evaluation of learning.)

Institutions should strive to see that assessment is as reliable (consistent) as possible in order to insure fairness to students.

To improve consistency in assessment judgments, more than one sample of learning should be examined whenever possible and more than one assessor should be used unless evidence indicates that one is sufficient. (Comment: The following are common types of errors:

- The tendency to rate too liberally or too severely.
- The tendency to avoid the extremes of the scale and to rate at the average.
- Allowing an outstanding or inferior trait or aspect of performance to influence the rating of other factors (halo effect).
- Judging the ratee according to a personal stereotype or personally held attitude.
- The tendency to prejudge the ratee by an initial impression rather than on the basis of observed performance.
- The tendency to rate a student more favorably if the student is similar to the rater in background, attitudes, or ethnic group.
- The tendency to rate a student lower than average if the previous ratee was outstanding or to rate a student higher than average if the previous ratee was poor (contrast effect).)

It is essential to insure that assessment is valid, i.e., that assessors measure what is intended.

Whenever possible, it is highly desirable to assess learning by direct comparison with learning objectives or criterion standards previously stated in clear language so that it is possible to decide whether the learning has or has not been acquired.

Insofar as possible, the results of individual assessment should be objectively stated.

Self-assessment is often very desirable as a means of enhancing personal development and awareness of the implications of acquired skills.

Self-assessment is ordinarily not a sufficient basis upon which to grant credit. To the extent that an institution relies upon self-assessment, special care must be taken to define learning objectives clearly and to assemble evidence that objectives have been achieved.

The evaluation of learning is such an integral part of its measurement that it is difficult to separate the two processes. Evaluation includes giving a student a grade in a course. While numerical and letter grades are the "coin of the realm" in higher education, they do not communicate clearly the level of competence the learner has attained. For this reason, a narrative evaluation of the learning acquired which provides concrete examples of situations in which knowledge, skills and/or compentencies were demonstrated is a very useful supplement or substitute for the traditional grade.

In the evaluation of learning, the faculty member makes a judgment of the level of learning demonstrated using some predetermined standard of what is unacceptable, acceptable, and superior. These standards should be consciously chosen and clearly stated. In defining standards, several levels of competence should be defined as precisely as possible. The ways of clarifying the level or standard expected include the use of a reference group (e.g., "The writing is adequate for freshman level."), identifying levels within a group (e.g., "adequate"), activities commonly associated with particular performance levels (e.g., "writing is clear and precise with excellent vocabulary and grammatical usage."), whether knowledge is basic or advance with respect to a specific function, and the type of responsibility associated with a particular level of competence.[6]

Recording the learning

The final step in the assessment process is to record the learning acquired on an official record or transcript. The usual practice in higher education is to record the course title and number, the number of credits, and the grade earned by the student. This fails to convey the nature and extent of the learning acquired by the student. It would be a more adequate record if the narrative evaluation of the student's learning, referenced to specific tasks undertaken and accomplished in the field placement, were placed on file with the registrar and available to potential employers at the request of the student.

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[1]Willingham, W.W., Principles of Good Practice in Assessing Experiential Learning, Columbia, Maryland, CAEL, 1977.

[2]National Center for Service-Learning, The Service-Learning Educator: A Guide to Program Management, Washington, D.C., Superintendent of Documents, U.S. Government Printing Office, 1980, p. 38.

[3]Ibid., p. 39.

[4]Duley, J., and Gordon, S., College-Sponsored Experiential Learning: A CAEL Handbook, Columbia, Maryland, CAEL, 1977, pp. 57-60.

[5]Willingham, pp. 22-27.

[6]Ibid., p. 29.

PRIMARY RECOMMENDED RESOURCES

This paper is meant as an introduction and supplement to the resources listed here. There is an extensive bibliography in the Compendium (#2) on each of the assessment techniques described in this paper.

1. Yelon, S., and Duley, J., Efficient Evaluation of Individual Performance in Field Placement. Published by and available from the Instructional Media Center, Michigan State University, East Lansing, MI 48824, for $1.00 plus $.25 mailing cost. You have received this book as part of this PANEL Resource Paper, and it is recommended for several reasons. It is brief, concise, and based on the experience of a number of faculty members. The advice given in the first ten pages is backed up by three excellent appendices. Appendix A compresses the essence of the Compendium (#2 below) into a five-page chart. Appendix B provides a discussion of appropriate tests for various kinds of knowledge, defines the kinds of knowledge, gives examples, indicates appropriate evidences of knowledge, and suggests means of measurement and gives examples. Appendix C provides brief examples of checklists.

2. Knapp, J., and Sharon, A., A Compendium of Assessment Techniques. Published by and available from CAEL, 300 N. Lakefront, Columbia, MD 21044. Contains an extensive bibliography of the assessment techniques described in this paper.

OTHER USEFUL RESOURCES

1. Jenks, C. L., and Murphy, C. J., Evaluating Student Progress, San Francisco, CA, Far West Laboratory, 1980. This is the fourth in a series of four staff development books designed for use in either pre-service or in-service programs with teachers. It is a well-designed resource that includes a set of readings, a section of suggested further explorations, an annotated bibliography, a limited list of other resources, and an appendix of sample evaluation forms.

2. National Center for Service-Learning, The Service-Learning Educator: A Guide to Program Management, Washington, D.C., Superintendent of Documents, U.S. Government Printing Office, 1980. Chapter III, "Learning: Your Program and the Student," deals with five functions related to learning, including measurement and evaluation. It contains helpful and specific program resources as well as an excellent bibliography.

3. Willingham, W.W., Principles of Good Practice in Assessing Experiential Learning, Columbia, MD, CAEL, 1977. This book provides a single source overview of important principles of good assessment practice as represented in 26 CAEL reports current in 1977. It presents procedural guidelines in an outline form with reference to fuller discussions in other publications. Since it deals with the assessment of prior as well as sponsored experiential learning, it addresses some aspects and problems of assessment that are not germane to this paper.