UNIT 3 ASSESSMENT AND EVALUATION OF ONLINE TRAINING

Structure
3.0 Introduction
3.1 Objectives
3.2 Components of Evaluation of Online Programme
3.3 Approaches to Evaluating Online Learning/Training
   3.3.1 Sloan-C Quality Framework
   3.3.2 The CEIT Model
   3.3.3 The Portfolio Approach
   3.3.4 An Input-Process-Output Structural Framework
3.4 Advantages and Disadvantages of Online Training
3.5 Post Graduate Diploma in E-Learning (PGDEL): A Case
3.6 Academic Counsellor’s Training Online (Act Online): A Case
3.7 Let Us Sum Up
3.8 Check Your Progress: Possible Answers
3.9 References

3.0 INTRODUCTION

In Block 2 Unit 4, you have learned various aspects and issues of evaluation. You can define the term evaluation in general also in the context of training and development. You can discuss the reasons for evaluation, and important frameworks for evaluation of training programmes as proposed by various authors. You may also discuss the changes effected by a training programme at knowledge, skills and attitudinal levels of the participants.

With regard to online education/training, you must see how online education works and which tools and techniques you should use. You have acquired some knowledge about these aspects in Unit 1 of this Block.

By this time you know the reasons for evaluation and for whom you evaluate a training programme, you may start work with the content of the training programme, then focus on the methods and techniques used, software used, multimedia used, support provided, and so on. What methods and techniques you should use depends upon many factors. You should keep in your mind the advantages and disadvantages of each method and to decide the best method for evaluation. As you will include the participants (students/trainees, teachers/trainers) for evaluation of a training programme, it is always better to inform them about the purpose of evaluation before you start. Motivation and attitude of the participants are important aspects of evaluation of a training programme.

In this Unit, we shall highlight components of evaluation or in other words what an evaluation should entail, though there are differences of opinions among the experts in this field. We shall discuss some approaches for evaluating online learning/training. We shall present common opinions of the trainees and supervisors in relation to advantages and disadvantages of online training. Lastly, we shall present a case study of online training.
3.1 OBJECTIVES

After going through this unit, you should be able to:

• identify the components of evaluation of online programme;
• discuss various approaches to evaluating online learning/training; and
• highlight the advantages and disadvantages of online training.

3.2 COMPONENTS OF EVALUATION OF ONLINE PROGRAMME

Experts have different opinions with regard to components of evaluation of online programme. You may identify the components from different points of view: Technology point of view, Participants’ point of view, Trainers’ point of view, and Institutional point of view.

• **Technology point of view**: tools used for online learning/training environment (see section 1.2, Unit 1), strengths, easiness and quality of the software, etc.

• **Participants’ point of view**: learning styles, nature of participation e.g., taking part in activities and group discussions, virtual field trips, interactive essays, number of messages sent and their quality, learning/training outcome (success of the participants),

• **Trainers’ point of view**: the way trainers conduct the training, reactions to the participants, method of holding seminar/discussion, group projects, and so on.

• **Institutional point of view**: The outcome of the training for the institution or organization as a whole.

Some authors (Kovalik and Dalton, 1998–1999) recommend a holistic approach to evaluating an online learning/training programme that includes soft data such as learner attitudes, motivation, and generalizability in addition to traditional hard data of performance measures.

Ravet and Layte (1997) suggest learner characteristic assessment such as prior knowledge, special needs, post assessment of the acquisition of new skills and knowledge, and measuring the transfer of that knowledge to real-life situations.

Phillips (1998) stated Return-on-Investment (ROI) will be used in the future to evaluate major expenditures in education and training. Evaluation of the success of education and training can occur at various levels:

Level 1: Participant satisfaction and evaluation of how training will be used
Level 2: Learning outcome measures
Level 3: Changes in on-the-job performance
Level 4: Changes in business impact
Level 5: Return on Investment—the program’s cost/benefit ratio

Return-on-Investment analysis includes collecting both hard and soft data. Hard data, for example, includes costs and time and soft data may include measures of job satisfaction, absenteeism, turnover, complaints, and
grievances. Specific calculations for ROI in training are outlined in detail by Stolovitch and Maurice (1998). While Phillips (1998) suggests simplifying ROI calculations, Stolovitch and Maurice (1998) suggest a complicated formula to assess the benefits and costs of any training program. Regardless of the approach, both propose systematic models for assessment purposes that can be manipulated to fit the evaluation context. Following is an outline of the process in both models (Schmeeckle, 2003).

**Phillip’s model**

Step 1: Collect data—evaluation instruments, purposes, timing, and levels
Step 2: Isolate the effects of the programme
Step 3: Convert data to monetary value
Step 4: Identify intangible benefits
Step 5: Tabulate programme costs
Step 6: Calculate the Return-on-Investment (ROI)

**Stolovitch and Maurice’s model**

Step 1: Calculate potential for improved performance
Step 2: Calculate estimated training costs
Step 3: Calculate the worth analysis
Step 4: Train
Step 5: Calculate organizational ROI

Evaluating the cost/benefit of educational technology is a necessary approach for any organization moving forward in pursuing extensive use of educational technology within the organization. Components of a cost/benefit analysis can be viewed from different perspectives in order to get a holistic look at the value of training from both the individual trainees and the organization itself (Rossi, Freeman & Lipsey, 1999; cited in Schmeeckle, 2003).

**Check Your Progress 1**

**Note:**

i) Space is given below for your answer.

ii) Compare your answer with the one given at the end of the unit.

In your opinion what should be the main components for evaluating an online training programme?

.........................................................................................................................................................................
.........................................................................................................................................................................
.........................................................................................................................................................................
.........................................................................................................................................................................
.........................................................................................................................................................................
.........................................................................................................................................................................
.........................................................................................................................................................................
.........................................................................................................................................................................
.........................................................................................................................................................................
.........................................................................................................................................................................
.........................................................................................................................................................................
Sener (2010) argued that online learning is not a creature from a different universe. A lot of evaluation tools apply just well to online learning programmes as to other types of programmes. He has cited commonly-used Kirkpatrick and Phillips Scales for example and stated that academic programmes routinely measure student satisfaction (level 1) and learning effectiveness (levels 1 and 2 on that scales) in online courses. Some corporate and academic online learning programmes attempt to evaluate impact at higher levels (behaviour change, return on investment).

Evaluating online training programme should be integrated into the strategic process. This will help to evaluate the training programme from a broader perspective. Evaluation is not an one time affair, it should be an ongoing process (see Unit 4, Block 2). Whether the training programme is long-term or short-term one, the programme may be evaluated in intervals, instead of end-of-programme evaluation. For example, if it is a 30 days training programme for the new faculty of an Open University, the evaluation may take place at 10 days intervals. A quick feedback from the participants helps to identify potential problems and guide the instructors/trainers to solve the problems during the programme and make the training programme more effective.

According to Mateo and Sangra (2007) every evaluative model or practice responds to the conceptions that we have about the teaching and learning process which become visible in strategic decisions we make concerning the design of the educational model and the related assessment model. The evaluative model has the main function of establishing the guidelines for the integration of all gathered information in order to respond to the different objectives of the evaluative action.

Quality of online learning should be measured in terms of student learning achievement and also the effectiveness of the teaching action and to the satisfaction of the assessment process. One of the most important concerns of distance education institutions is to develop a formative assessment system (Mateo and Sangra, 2007). Assessment applied to online training programme must help to identify and apply improvements in the participants’ learning process, through a permanent feedback.

A variety of approaches for evaluating online learning effectively are available (see Sener, 2010).

### 3.3.1 Sloan-C Quality Framework

The Sloan Consortium (Sloan-C) has developed a framework for quality online education (Moore, 2002). It is a composite framework whose five key “pillars” or components (Access, Student Satisfaction, Learning Effectiveness, Faculty Satisfaction, and Cost Effectiveness) can be used separately or in combination with a variety of measures to evaluate the effectiveness of online learning. Sener opined that although a major focus of this conceptual framework is supporting online learning programmes that are equal or better in quality to campus-based programmes in higher education, all of the framework’s five pillars also focus on effectiveness, and the Faculty Satisfaction and Cost Effectiveness also apply to quality improvement.
The Sloan-C Quality Framework easily accommodates evaluating results and process and integrates well with other evaluation tools such as, the Kirkpatrick and Phillips Scales. These scales correspond closely with Student Satisfaction (K-P level 1), Learning effectiveness (K-P level 2), and Cost Effectiveness (K level 4, P level 4 and 5).

### 3.3.2 The CEIT Model

Sener (2005) developed a four staged model for evaluating online learning called the CEIT model. The model focuses on Comparisons(C), Effectiveness (E), Quality Improvement(I) and Transformation(T).

Sener explained that using comparisons to understand the key attributes or capabilities of various online learning practices can be useful. The results of comparative studies can be used to improve programmes.

Sener argued that focusing on Effectiveness can be deceptively simple (Is it effective? What elements make it effective? What changes would make it more effective?), but it enables evaluation of online learning on its own terms and can provide useful information on what works and does not work.

According to Sener evaluating Quality Improvement focuses on measuring the effects of implementing changes, so the “evaluating product and process” frame is particularly applicable here since both influence the results in practice. Sener explains with an example, online learning object repositories often do not improve quality despite containing excellent resources because existing processes do not adequately support their use (good product, bad process). Conversely, online courses often link to a variety of learner support services, but the services themselves may not be adequate (good process, bad product).

The last stage of the model, Transformation focuses on how online learning programmes affect the organization or institution.

In brief, the CEIT model accommodates application of well-established evaluation tools through determining what is valuable about the results and process of a project, and focusing on the ultimate aims of improvement and transformation.

### Check Your Progress 2

**Note:**

i) Space is given below for your answer.

ii) Compare your answer with the one given at the end of the unit.

i) Name five pillars of Sloan-C Quality Framework.

............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
............................................................................................................
### 3.3.3 The Portfolio Approach

Mateo and Sangra (2007) explained a new paradigm for assessment design in distance education and online learning. They have discussed some of the possibilities opened by an open sourced platform i.e. Moodle which appears to be one of the best designed platforms to support instructive processes that are closer to the new paradigm (Dougiamas & Taylor, 2003). Its tools allow you to analyse how to manage the information and the communication and also how learning takes place. The portfolio represents an important tool of integrated management in distance education context.

The student/trainee can choose which product are to be included in the portfolio.

The portfolio allows the student/trainee to present his/her creation to the teacher/trainer so that this gets a better understanding of the work in a global perspective. Trainee and trainer get an opportunity to discuss the key elements in a concrete and intelligent way. Debating the contents of the portfolio, all have a clear awareness of the student’s/trainee’s level of development as an individual and as a participant in an educational/training programme.

From digital point of view, technicians tend to understand the e-portfolio as a digital container that is able to store texts, images, sound and even software instruments in order to manage a big and diverse amount of information (Abrami & Barret, 2005). However, Mateo and Sangra (2007) argued from their point of view it is much more than that. It forms a dynamic and comprehensive meeting space for the processes of instructional, evaluative and personal development of the student (Barbera & Ahumada, 2007).

### 3.3.4 An Input-Process-Output Structural Framework

Yu (1999) proposed a structural framework with an emphasis on input-process-output for evaluating web-based instruction. The framework also functions as a reference for conceptualizing an evaluation from abstract level
Online Training
to the specific level. The structural framework has four levels of abstraction: **paradigm, theory, model, and measurement**. However, the emphasis on input-process-output is firmly embedded in the paradigm level.

According to Yu (1999) the proposed structural framework endorses a paradigm that emphasizes input-process-output of human learning inspired by cognitive psychology. This paradigm challenges the input-output emphasis under a “black-box” approach. An input, which is usually a treatment, is delivered to the intended audience, the output, which is usually an observable outcome, is evaluated and the effectiveness of the treatment is inferred.

It is stated that under this framework, the procedures for evaluating web-based instructions could be viewed in two dimensions. The first dimension is **level of abstraction** *(defining various constructs and concepts, defining variables, developing or applying instruments to measure the variables in the measurement, and determining the relationships among the variables based upon the data collected by the instruments)*.

The second dimension is the **input-process-output stream** *(defining the media properties, defining the mental constructs and mapping them to the media properties, defining the criteria of achievement specifying the behavioural outcomes)*.

**Media properties**: It is important to define what web-based instruction is by identifying what certain features are introduced by the implementation of the medium. The evaluation should focus on those specific properties. Typical examples of web-based instructions properties are: learner control modules that present self-customized sequences to various learners, virtual communities that provide chat rooms, threaded discussions, and ListServ groups, hypermedia with graphical representations and animated illustration of information, hyperlinks to world-wide resources (Yu, 1999).

One way to treat the tools which carry specific media properties as numeric variables and track the frequency of using the tools, e.g., the number of chat, threaded discussion, and ListServ messages could indicate the utilization of the participants. The number of time spent and the number of page accessed within the web-based instruction could reflect the user engagement. Several web traffic tracking technologies can be used to collect data for studying user patterns on web-based instruction (Yu, Jannasch-Pennell, DiGangi, & Wasson, 1998).

**Mental constructs**: Different media properties can change different aspects of participants mentality. A mental construct can be broken down into several variables for in-depth investigation. We can take collaboration for an example, which can be defined by eight factors: (i) openness to learning opportunities, (ii) self-concept as an effective learner, (iii) initiative and independence in learning, (iv) informed acceptance of responsibility for one’s own learning, (v) a love to learn, (vi) creativity, (vii) future orientation, and (viii) the ability to use basic study skills and problem solving skills (Guglielmino, 1977; Guglielmino & Murdick, 1997). These variables could be measured by validated and reliable instruments on attitudes and cognitive styles (Yu, 1999).

**Achievement**: The attitudinal and cognitive change could result in improvement in Internet knowledge and skills (using web search, e-mail, newsgroups, threaded discussion etc).
Assessment and Evaluation of Online Training

Behavioural outcome: It is expected that test scores of Internet skills could predict the application of Internet skills reflected by observable behaviours. If the participants, for example, are the Open University teachers, then incorporation of Internet technologies into teaching, course designing and providing support to the students are expected. There may be different variables such as, the number of web pages developed for courses, the frequency of using the Internet as a source of teaching materials, and so on. These variables could be measured using various techniques like survey, interview and on-site observation.

Check Your Progress 3

Note: i) Space is given below for your answer.
ii) Compare your answer with the one given at the end of the unit.

i) Mention two advantages of portfolio.

ii) Mention few media properties on which the evaluation should focus.

3.4 ADVANTAGES AND DISADVANTAGES OF ONLINE TRAINING

You may find reports and discussions on advantages and disadvantages of online training in books, journals, Internet, and so on. You will find some common advantages and disadvantages as reported by the participants and trainers/supervisors. Here, we shall mention some advantages and disadvantages of online training as reported by the trainees and supervisors of an online training programme (Schmeeckle, 2003).

The common advantages as reported by the trainees are:

- No travel
- Convenience and time saver
- Could do at own pace and be able to work around own schedules
- Being able to stay home and do it
- No travel cost

The common disadvantages as reported by the trainees are:

- Not having classroom interaction, discussion
- Not able to ask questions and/or clarify information
- Missing out on great stories, meeting people and making friends
- Going too fast
- Would still required to work
Online Training

- No hands-on experience

The common advantages as reported by the supervisor are:
- More current and updated information
- Employees can train while doing duties
- No need to leave home/family

The common disadvantages as reported by the supervisors are:
- Loss of experience from discussion with other students and instructors
- No other disadvantage

These are not complete lists. You may see Schmeckle (2003) for detail report. You know well that the responses you obtain after the training programme provide very good input for evaluating the same training programme.

### 3.5 POST GRADUATE DIPLOMA IN E-LEARNING (PGDEL): A CASE

Indira Gandhi National Open University (IGNOU) offers the Online Post Graduate Diploma in E-Learning (PGDEL) from January 2010 to develop professional competencies in offering online programmes in the Country. The programme is offered through the Staff Training and Research Institute of Distance Education (STRIDE).

The objectives of the programme are to develop human resource capabilities in planning, designing, developing, implementing, and evaluating e-learning programmes.
The programme has blended learning with compulsory face-to-face practical at the Headquarters, Intensive online training to develop e-learning professionals, strong project work component to facilitate hands on work in online learning tools, personalized online student support, use of Open Educational Resources (OERs) and recommended texts, use of Moodle Learning Management, synchronous delivery methods using online conferencing tools, and extensive use of discussion forums for both academic and personal support.

### 3.6 ACADEMIC COUNSELLOR’S TRAINING ONLINE (ACT ONLINE): A CASE

Academic Counsellor’s Training – Online (ACT-Online) programme is designed specifically for those who are engaged in or wish to be engaged in the tasks of providing tutoring/counselling and other technology mediated support to the distance learners. The programme is offered through the Staff Training and Research Institute of Distance Education (STRIDE).

The ACT-Online is grounded in both the theory and practice of Open Distance Learning. Some of the important contents covered in this programme are: ODL concept, models of ODL, student support services, tutoring and counselling, handling of assignments, evaluation of assignment responses with tutor comments, development of study skills, support to the educationally disadvantaged students, use of new technologies for students support, and so on.

The objectives of the programme are to develop human resource capabilities in planning, designing, organising student support services with special reference to tutoring and counselling, evaluating assignments, using new technologies, and so on.
The ACT-Online programme consists of three components. These are (i) study materials which are uploaded in LMS, (ii) Power point presentations which support the study materials, and (iii) video programmes which supplement the study materials.

Each component facilitates the participants to work on their assignments online.

This Programme is entirely developed in IGNOU LMS (developed in ASP.net and MySQL. The inbuilt discussion forum facilitates the peer to peer and facilitator to peer interaction as well. IGNOU LMS also provides calendar, in which participants get tasks and schedule of the programme. Announcement is another component in which the participants get the latest information and update of the programme. The main component of the LMS is ‘My Portfolio’, where participants get the facilities to upload their assignments and receive marks after evaluation is done by the evaluators.

### 3.7 LET US SUM UP

In this unit, we have discussed component of evaluation of online programme. We have mentioned that you may identify components from different point of view: technology, participants, trainers, and institutional. We have touched upon very briefly on few models like Philip's model, Stolovitch and Maurice's model. We have discussed various approaches to evaluate online learning/training. A variety of approaches for evaluating online learning effectively are available. The Sloan – C quality framework is a composite framework whose five key “pillars” or components: Access, Satisfaction, Learning Effectiveness, Faculty Satisfaction, and Cost Effectiveness can be used separately or in combination with a variety of measures to evaluate the effectiveness of online learning. The CEIT model developed by Sener focuses on comparisons (C), Effectiveness (E), quality improvement (I) and Transformation (T).

We have also highlighted the portfolio approach, and an input – process – output structural framework.

There are some common advantages and disadvantages of online training. At the end we have highlighted two case studies of IGNOU: Post graduate diploma in e-learning and Academic counsellor’s training online.

### 3.8 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

**Check Your Progress 1**

Online training programme can be evaluated from

- Technology point of view (tools used for online learning/training environment, strengths, quality of the software, etc.)

- Participants’ point of view (learning styles, nature of participation e.g., taking part in activities and group discussions, virtual field trips, interactive essays, number of messages sent and their quality, learning/ training outcome, and so on)
• Trainers’ point of view (the way trainers conduct the training, reactions to the participants, method of holding seminar/discussion, group projects, and so on)

• Institutional point of view (the outcome of the training for the institution or organization as a whole).

Check Your Progress 2

i) Five pillars of Sloan-C Quality Framework are: Access, Student Satisfaction, Learning Effectiveness, Faculty Satisfaction, and Cost Effectiveness

ii) CEIT model accommodates application of well-established evaluation tools through determining what is valuable about the results and process of a project, and focuses on the ultimate aims of improvement and transformation.

Check Your Progress 3

i) a) The portfolio allows the learner/trainee to present his/her creation to the teacher/trainer so that this gets a better understanding of the work in a global perspective.

   b) Trainee and trainer get an opportunity to discuss the key elements in a concrete and intelligent way.

ii) Examples of web-based instructions properties are: learner control modules that present self-customized sequences to various learners, virtual communities that provide chat rooms, threaded discussions, hypermedia with graphical representations and animated illustration of information, hyperlinks to world-wide resources, and so on.

3.9 REFERENCES


