

Education and E-Learning Evaluation and Assessment

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INTRODUCTION

The assessment of e-learning shares most of the needs and requirements of face-to-face teaching, including clarity of the main objective, needs analysis, comprehensibility of objectives, definition of resources, and balance report (Calvani & Rotta, 2000). However, in e-learning environments the qualities of both monitoring and formative assessment have prominence, and can even determine the success of the course (Moore & Kearsley, 1996).

In the *learner-centered* approach, typical in e-learning, the student is the protagonist of the teaching-learning process and thus, assessment is considered from a new perspective. It can be defined as the systematic process of correction, revision, collection, and use of information regarding both the students and the course in order to favor the progress and the learning of each student (Palomba & Banta, 1999). Assessment and evaluation are two different concepts even though they are interconnected: the former determines the student's knowledge, skills and attitudes while the latter is necessary to express an opinion on learning results and on the quality of teaching.

ASSESSMENT OF E-LEARNING

According to the leading experts in this field, the assessment of e-learning is a key process which not only evaluates the coherence between the objectives achieved by learners and what has been planned in terms of content and methods, but also monitors the dynamics of the process. In this way, it is possible to

obtain useful information to replicate the formative action and/or make it more flexible.

The assessment of online training courses refers to various aspects (Fragno, 2002):

- Learning assessment
- Process assessment
- Course evaluation
- Interaction assessment
- E-learning platform assessment

In the *learning assessment*, based on timing and content, it is possible to distinguish:

- *Diagnostic assessment* of which the aim is to identify students' background knowledge and/or their needs in order to personalize teaching and to set up a suitable learning program;
- *Formative assessment* of which the aim is to highlight the knowledge, competencies and skills acquired by each student at the end of each teaching module;
- *Summative assessment* of which the aim is to check the level of competencies and skills at the end of a course or to evaluate the effectiveness of the formative action. It must include several tests administered both during and at the end of a course.

The *process assessment* is intended to test the efficiency and the effectiveness of the managerial and organizational variables as well as of all those aspects which can be involved when developing and teaching a course. This kind of assessment can make use of a

questionnaire to gather information referring to the students' reactions to the training experience and to produce useful feedback on what the course has meant for the students. Teaching effectiveness and the training process are closely linked because a deliberate teaching plan can be critical for the students to reach the course objectives. As a result, student evaluation of learning means assessing the validity of the teaching process.

The *course evaluation* is divided into three phases. The first is *ex-ante* and it refers to the identification of a series of indicators which are evaluated by a financial body on the basis of the planning prospect target of the institution that proposes the course of study. The purpose of the other two phases, *in-itinere* and *ex-post*, is to identify the discrepancies and the conformities between the planning proposal and the implementation of the plan. In particular, the formative assessment (*in itinere*) can be divided into learning assessment (*effectiveness*) and process assessment (*efficiency*). As far as the latter is concerned, two different kinds of data exist: the objective data are provided by the organization which offers the course (obtained through the official reports that are submitted throughout and at the end of the course) and the subjective data which are provided by the students (gathered through questionnaires) who express their opinion about:

- Instruction (competence, effective timing, interest in the contents, clarity and articulation of topics);
- Course structure (presentation, articulation of contents, timeliness);
- Teaching material and contents (conformity to the course's general objectives and to the students' background knowledge);
- The e-learning platform adopted (functionality, clarity, and intuitiveness);
- The experience (pros and cons of the course).

Both during *the interaction assessment* and the *e-learning platform assessment*, it is necessary to emphasize that integrated e-learning environments are mainly based on written and asynchronous communication which provides the possibility to pair collaborative learning with *learning by doing*. These environments are generally used for social-constructivist learning processes where a virtual community collaborates in the development of mutual products or interaction about the course topics. Technological equipment used for this

process must be able to support each of the necessary practical activities (exercises, simulations, etc.). It is important to verify immediately what the participants have learnt. Assessment is also based on the observation of the interaction among participants and on their means of collaborating and learning together. A balance between tests based on quantitative aspects (the number and distribution of messages in diverse work areas) and qualitative ones (content of messages) is fundamental. In analysing several online training experiences, it can be emphasized that the best results from the learning perspective are obtained when a frequent and positive collaboration between the instructor and the students (vertical interaction) is achieved in addition to frequent communication between the students (horizontal interaction) (Bocconi, Midoro, & Sarti, 1999).

The interface in virtual learning environments should be intuitive and friendly so that students' needs are facilitated by their use. Especially in the case of short courses, the time necessary to learn how to use the system should be proportionate to the course objectives. It is also important that the environment should offer a series of useful features for adequate support of the participant in the learning process.

TOOLS TO EVALUATE E-LEARNING

Some e-learning environments provide the possibility to track and elaborate a great quantity of information automatically thus making data collection easy, are very important. Moreover, one of the most important features of e-learning is the monitoring method that typically includes *tracking systems* and *e-portfolio*.

Tracking Systems

A tracking system is usually characterized by:

- The *login* accesses the e-learning platform which identifies the user, tracking the connection date;
- The *login session* allows measurement of the duration of the connection to the e-learning platform by the user;
- The *visited areas* of the platform allow monitoring of the areas visited by the user during the login session;
- The *testing evaluation* scores the tests completed by the user;

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