

The Relationship Between Assessment and Evaluation in CSCL

Serena Alvino

Institute for Educational Technology, National Research Council, Italy

Donatella Persico

Institute for Educational Technology, National Research Council, Italy

INTRODUCTION

In the educational field, evaluation is a very complex activity due to the intrinsically multidimensional nature of the processes to be evaluated. Several variables must be taken into consideration, and they interact and influence one another: the object and the goal of the evaluation determines the criteria, the methods, and the data to be used for the evaluation. In this chapter, we will focus on evaluation in computer-supported collaborative learning (CSCL). In this field, a primary role is played by the *monitoring* process, which allows us to gather important information about the learning process while it takes place. Indeed, monitoring serves three purposes: it provides real-time data about group dynamics so that they can be used by tutors to facilitate learning and stimulate collaboration among trainees; it provides designers and evaluators with data about learning system usage that are needed to evaluate its effectiveness; finally, it supplies information about the learning process and its outcomes, thereby informing assessment. Hence, monitoring can be seen as a sort of common denominator between the methods used to foster collaborative learning and those that allow the gathering of data for the two types of evaluation.

BACKGROUND

Evaluation was defined by Hadji (1995) as the formulation of a value judgment on a given reality that is the object of the evaluation. More precisely, evaluation is the consequence of ascribing meaning to facts, data, and information associated with that reality. The judgment is generally based on a definition of suitable criteria and on the identification of the quality models used as a reference.

In education, a distinction is usually made on the basis of the object of the judgment: when the focus is on changes in individual competences, we talk about learning *assessment*, while if the object of judgment is the learning system, the teaching methods and the learning resources, the term *evaluation* is generally used (Ellington, Percival, & Race, 1993). When looking at the evaluation activity from the point of view of its goals, another distinction is usually made: *formative* evaluation aims to obtain both general and detailed information in order to improve the object of evaluation, while *summative* evaluation aims to formulate a comprehensive judgment on the object to be evaluated, often with certifying purposes. In accordance with these different goals, formative evaluation is usually carried out *in itinere*, that is, during the learning process, so that any problems are identified and dealt with as early as possible. Summative evaluation, on the other hand, is usually carried out at the end of the learning process, or at particular stages where a global judgment of the results is needed. In spite of this connotation of summative evaluation, it may also be based on data that has been collected during the learning process, not just at the end.

The above-mentioned terms and concepts have been used for over 50 years in both face-to-face and distance education (Bloom, Hastings, & Madaus, 1971; Scriven, 1967). The meanings of the terms have remained basically unvaried while the methods used to carry out evaluation and assessment continue to undergo major changes due to the evolution of learning theories, methods, and techniques. According to constructivist learning theories, for example, learners should be actively and increasingly involved in formative evaluation practices and consequent decisions in order to promote the metacognitive and self-regulation skills needed for effective personal and professional

development. It is for this reason that evaluation strategies are being increasingly integrated into the learning process, and self-evaluation and peer evaluation are frequently practiced along with hetero-evaluation (Ranieri, 2005).

Although according to the above definitions, the distinction between assessment and evaluation is quite clear-cut, the two concepts have several points in common, both in theory and in practice. First, the evaluation of learning outcomes, or assessment, is of paramount importance in the evaluation of the quality of the educational process. A second correlation derives from the considerable overlap of both the methods and the data generally used for the two kinds of evaluation. According to Moore (1999), the relationship between evaluation and assessment lies mostly in the “monitoring” process. This is particularly true in the CSCL field, where the use of computers as mediators of communication between individuals allows us to record not only the interactions between participants, but also any event that is regarded as relevant for tutoring, evaluation, assessment, or research purposes.

EVALUATING A LEARNING SYSTEM

In order to evaluate a learning system, a systematic study should be carried out to produce a value judgment on its *efficiency*, its *effectiveness*, or any other aspect deemed relevant. This normally includes the collection, analysis, and interpretation of information on its various aspects (Thorpe, 1993), such as the quality of learning materials, effectiveness of the tutoring, efficacy of the collaboration between the members of the virtual community, as well as the suitability, user-friendliness, and efficiency of the tools used for synchronous and asynchronous communication.

The evaluation of the *efficiency* of a teaching program or of a single course focuses on organizational aspects and on issues related to the cost-benefit ratio of the considered system, where costs and benefits are not considered solely from a financial standpoint. Indeed, costs can also be regarded from the point of view of investments in human resources and learning materials, while benefits usually include educational and social outcomes. The evaluation of the cost-benefit ratio of a learning program is therefore quite complex and involves political, social, economic, and educational considerations (Phillips, 1998). It is worth pointing out

that this ratio is often studied by means of a comparative approach aimed at determining the conditions which make one method more suitable than another from the point of view of the “return on investment.”

For example, first and second generation distance education would seem preferable to face-to-face education as the number of students increases. This is because the fixed costs of a large-scale production of learning materials are offset by the variable costs, which increase more slowly than those of traditional education. On the other hand, face-to-face and online education have similar trends as far as tutoring costs are concerned, since in third generation distance education, they are directly proportional to the number of students (Trentin, 2000).

The evaluation of the *effectiveness* of a learning event is a key factor in the development of e-learning initiatives and deeply affects their design since it provides information on the adequacy of the instructional design with respect to its objectives. The evaluation process can also lead to reflection and revision of the educational objectives, as it may reveal a divergence between the latter and the learners’ expectations and/or the social or training needs which the course was supposed to meet.

Evaluation of effectiveness also means understanding how much learning (intended as a modification of students’ competences) has really occurred. However, it should be noted that formative evaluation of a course goes beyond the assessment of students’ learning. For example, another aspect usually covered in the evaluation of a learning event is the degree of student satisfaction. This is not necessarily correlated with learning; yet it is a useful source of information for at least two reasons. The first is that a pleasant approach motivates students and predisposes them to face possible difficulties in a positive manner. The second is that, at least for adult students, positive feedback often mirrors the conclusions of a critical reflection on the educational process.

Typically, student satisfaction about a learning event is ascertained through interviews or questionnaires aimed at recording their opinions on the course and its components and their perceived satisfaction compared to their initial expectations. Hence, determining whether the educational objectives have been met and performing a survey of the participants’ opinions on the learning event are both necessary in order to carry out formative evaluation of a training event. Together,

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