

What are the functions or methods of evaluation?

There are two main reasons for evaluating learning systems:

- To improve the learning system as it is being developed, and determine if the learning goals will be achieved and project goals are being met;
- To determine the effectiveness of the system for the intended recipients, that is whether the learning outcomes are being met.

Evaluations are key functions which should inform elements of design projects, rather than be done as an after-thought.

Evaluations can be *formative* (done during development) or *summative* (measuring the effectiveness and impact of the completed product). They are generally included in a project plan. When development of a learning system is planned, objectives or goals, activities and strategies are included as part of the project plan. Items to be included in the learning system might be content, format, goals, delivery strategies and activities. The evaluation process determines whether the items listed in the plan have been accomplished.

The people connected to or affected by the development and delivery of a learning system need information about usability and effectiveness of the system. For example, staff involved in development, staff teaching with the system, recipients, stakeholders, and management.

Does the system actually do what it was designed to do? Is knowledge and learning improved?

Formative evaluations

These are carried out during the development phase and may lead to a change in direction for the project. The sort of questions you might ask include:

- How do the elements of the learning system - content, goals, activities and delivery strategies match those described in the plan? If they do not match, are changes necessary?
- Are the stages in the development matching the proposed timeline?
- Are the actual costs of the project meeting those in the initial budget?
- Are there any barriers to completion of the learning system? How and to what extent can they be overcome?

Summative evaluations

These evaluations would be done on a completed learning system to determine if the finished product has achieved what was intended.

- How did the learning system meet the intended goals for learning?
- In what ways was the learning system effective for recipients?

- Which components were the most effective?
- What were any significant unintended impacts of the learning system?

During evaluations both quantitative data (numbers) and qualitative data (descriptions) can be collected. The instruments used for data collection depend on the type of data required. For example, common data collection methods used are in the following table:

Qualitative	Quantitative
Observations	Questionnaires
Interviews	Tests
Focus groups	Databases

Evaluation Functions

1. Review

In this process, participants examine existing products available in the market, and review published literature. For example: Ministry of Education curriculum requirements and effectiveness and quality of existing learning systems might be explored in a review. This step sets the foundation for any project.

2. Needs Assessment

This type of evaluation usually includes a market analysis and determines whether the proposed product is actually required. Is there anything else out there doing the same job? If there is a similar product on the market, then why develop another one? Is the proposed design an optimal solution to the problem. Unfortunately this step is often neglected, but if it is carried out, much time and money can be economised.

3. Formative Evaluation

In this phase, bugs can be pinpointed and eliminated, review by experts can clarify what is good and bad, users can test features for usability and decisions for further development can be made. This type of evaluation is invaluable for ensuring a highly usable product is created.

4. Effectiveness (summative) Evaluation

In this stage of evaluation, the learning system is tested to determine if it meets the stated learning outcomes. Does the learning system improve learning and do users perform better and achieve better grades as a result of using it? Field tests, observations, interviews and performance assessments might be conducted.

5. Impact (summative) Evaluation

This phase tests whether the learning system helps participants transfer learning, i.e., can the learners apply their learning to the real world? For example, if nurses are taught practical skills such as giving injections through simulation, can they actually give injections in clinical situations? Activities such as observations and interviews might be conducted.

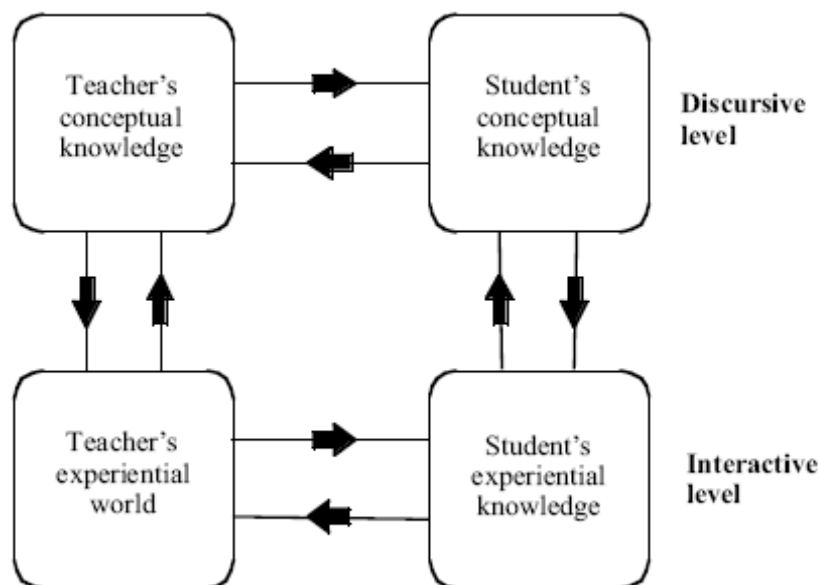
6. Maintenance (summative) Evaluation

Once a product is in use, the viability of it needs to be evaluated at regular intervals so that improvements can be made to maintain its usability and effectiveness. This type of evaluation will ensure currency is maintained.

Other types of evaluation

Evaluation can also be conducted in other ways through research projects and action research is particularly useful for evaluating products and courses. Another example of an evaluation model commonly used in educational technology is Laurillard's conversational framework. The framework facilitates an evaluation of characteristics of media against a comprehensive set of twelve teaching/ learning activities" (2002, p20). The framework is illustrated below:

Figure 1: A 'conversational' framework for the learning process



Source: Laurillard (1999)