NEW MANNERS OF ACCOMPLISHING EVALUATION IN EDUCATION THROUGH ICT

Mariana - Viorela, Grigore - Filip (Şerban)[1]

Abstract

Evaluation is an essential component of the teaching process in respect that it assists us in measuring the degree in which the student reaches the set objectives and expresses academical progress in relation to a target previously established.

This activity has a continuous characteristic throughout the study years and for each step new goals are established. Due to the fact that it is a complex and delicate process, it requires thorough organization involving: planning, analysis, evaluation strategies, precise and coherent implementation and last but not least, the development and the applying of measures as to increase the outcome of the educational action.

Owing to the expansion of technology and the use of the new information and communication technology in all sectors of live, the evaluation of the teaching process has acquired new forms of expression, forms that have easily been embraced by students because of their interactive features.

In this article we shall deal with aspects concerning the organization and performance of evaluation in education and we shall present manners of introducing the new information and communication technology in order to successfully accomplish it.

Key words: *education, evaluation, ICT, Internet.*

JEL Classification: http://www.aeaweb.org/jel/guide/jel.php *:* I000, I210, O310

Introduction

Educational environments imply setting goals that, over a definite period of time, the student must reach them. In order to test the degree of achievement of the educational objectives it is necessary to make an assessment.

According to Ioan Jinga, assessment in education is a complex approach that compares the effects of educational activity with planned objectives (qualitative assessment) taking into account resources (checking the effectiveness of the educational act) and / or referring to the results obtained previously (to show progress against the original state).

Evaluation is a stage of the pedagogical process; it is knowledge control, but also an opportunity for intervention and refinement. In the last decades evaluation has received special attention, insisting on its role of regulation with the aim of increasing efficiency in education. Gradually the evaluation *focusing on the teacher* (according to the classical model) was replaced, as is also the case of the teaching activity, with *pupil centered evaluation* (fig. 1).

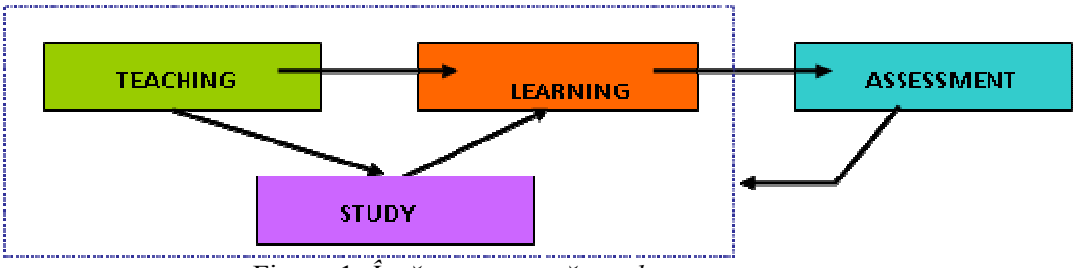

Figura 1. *Învăţrea centrată pe elev*
Sursă: prelucrat dupa Radu, I. T., *Evaluarea în procesul didactic*.

This new perspective on evaluation has generated competency implications in proficiency; the roles and forms of evaluation relate, in particular, to the assessment of

[1] Ph.D. student, Valahia University of Târgovişte, Email: viorelaserban25@gmail.com

competences (and less to knowledge) in order to regulate the learning process (giving marks being a mere consequence of evaluation).

As learning has to be differentiated, adapted to students' understanding capacities, in the same way, we plead for *individualized assessment*. These changes in curriculum design dictate the transformation of some traditional "functions" of the evaluation, which primarily aimed at classifying, differentiating, selecting pupils (Depover, Ch.).

Evaluation is part of the educational process and it is important *to make the pupil responsible,* the teacher has to present the situation to the pupil, the way to improve the its results and the student - in turn - to proceed accordingly.

As a consequence, it is necessary to involve a variety of evaluation methods in relation to the pursued goals, the evaluation during the whole schooling period, the verification of the important objectives of theteaching units, the assessment of *the higher level of thinking processes* and the involvement of the students in the evaluation activity.

Formative assessment and summative assessment

The evaluation guides us in learning what the students know (or know how to do) helps us to constantly improve the educational act, that is why we affirm that it is an integral part of learning.

The initial assessment is done through oral, written or practical tests in order to establish the starting point of the training (at the beginning of the study year, of the semester, a chapter, etc.) and to design a course of the educational act.

The summative assessment is done at the end of a stage, chapter, and unit and at the end of the semester or the school year; the themes achieved have to cover all the issues addressed so far. It also bears the name of cumulative or balance sheet evaluation.

The formative evaluation, also called continuous, because it is carried out permanently during the studies, utilized at short intervals. It provides feedback on how well the student knows the material and the frequent mistakes, which gives the teacher the opportunity to make a recovery plan or to adapt the didactic approach.

Following the materialization of the formative assessment, both students and parents receive feedback on pupils' outcomes and how they can improve. The teacher "makes adjustments according to the individual differences in learning, to ensure that all students understand, practice and perfect each component as they progress towards the ultimate goal" (Ascher, F.).

Students become aware of their own learning and are motivated to increase their performance. "This ability to monitor one's own learning can be the most important asset of formative assessment." (Bellier, S.).

The marks will not disappear in time, as it is necessary to classify the school results, but the emphasis should be on the idea of permanent personal and educational development.

2. The design and planning of the evaluation

The evaluation is done through a variety of tools, which together with methods will be found in a more elaborate *evaluation plan*. (Carre, P.).

The design of the evaluation is based on strategies:

- *Strategies for analyzing students' learning needs;*
- *Strategies to encourage the direction of learning and collaboration;*
- *Strategies for monitoring progress;*
- *Strategies for verifying understanding and encouraging metacognition; and*
- *Strategies for demonstrating the understanding and skills training.*

a) Strategies for analyzing students' learning needs.

"What influences most the learning process is the knowledge the student possesses when he leaves. Make sure of what he knows and train him accordingly! "(David Ausubel).

These strategies refer to *the initial assessment* aimed at establishing students' level of training both in the mastery of knowledge and the skills / abilities required before going through the next educational segment and also identifying typical mistakes. That's why we say it performs a *diagnostic function*. It also has a *prognostic function* because it provides the teacher with information on how to organize the didactic activity, according to the situation.

Among the evaluation methods / tools used for this purpose, we mention:

• examining the student's activity;

• the student's portfolio;

• Graphic organizers (conceptual charts, grading charts, sequential activities, priority lists);

• the *I know - I want to know - I have learned* Maps

The graphic organizers illustrate the elements of a concept or a process, but also the relationships between them. They result in encouraging students to verbalize their knowledge and verify their understanding; allow students to use both brain hemispheres and retain information in both linguistic and graphic form.

Graphic organizers also have the advantage of making abstract ideas more visible and concrete, thus allowing a better assessment of the thinking habits. Research demonstrates the significant improvement of results when students create different types of charts and maps demonstrating their understanding. The creation of graphic organizers *at the beginning of the training*, and their completion by the students, leads to revealing previous knowledge from areas of interest and typical mistakes.

By activating students' previous knowledge by helping them make personal connections before browsing new content, like the map *I Know - I Want to Know - I have Learned* (*K-W-L* Map) allows students to build meaning about what they have learned, compare new knowledge of what they already knew and to clarify their ideas; is one of the most common graphic organizers, recognized for illustrating the students' previous knowledge. Students generate ideas through brainstorming in the *I Know* section. Next, it generates content-related questions in the *"I want to know"* section. Finally, as students begin to answer these questions, they record the information in the section *I have Learned.*

The map can be used at any level of education. It can be used to start a new unit and refer to these tools throughout the unit. Usually, the map is not used for scoring; it is a way of expressing ideas and questions freely, without fear of students being judged. These maps can help organize pupils by groups, depending on the level of previous knowledge or the expressed interests.

The initial evaluation is useful at the beginning of the school year, at the beginning of some learning units (in the familiarization / updating phase) after holidays; prepares to enter a learning activity through a fertile context for building new knowledge.

b) *Strategies to stimulate learning and collaboration*. These correspond to the *formative assessment* and consist of the following activities performed by students: planning, understanding the tasks without the teacher's help, using various resources and learning from their own mistakes.

The methods applicable in this case are: *observation, self-evaluation, inter-evaluation, reflection*. Through *self-evaluation*, students have the opportunity to check their own learning product, become aware of their more independent results in the study.

Students are evaluating each other through *interevaluation*. By using the two methods, it's about empowering, understanding the weaknesses and motivating them to improve them.

In the metacognition plan, *the reflection* supports the involvement of students in their own learning by indicating activities that will help them to learn.

Various education-specific tools are used to guide learning and collaboration. For example, *the checklist* is used in independent work through undisclosed documenting or

discovery activities or project type. Similarly, the *rating grid* (verifying compliance with standards, self-evaluation) that is less accurate than the scoring guide. Another tool is *the reflection journal*, which, like the above mentioned, supports the self-evaluation and empowerment of pupils (learning partners) in the educational process.

c) *Progress monitoring strategies* - formative assessment. Students receive the necessary data to self-assess themselves during unreserved research or discovery activities by the teacher, who in turn register the student's evolution from the point of view of assimilating new notions and acquiring specific skills.

Feedback is used to draw attention to common mistakes and other learning difficulties. These strategies are used: *observation, progress reports, project meetings, checklists, or learning logs*.

Observation is an informal type of activity, records on attitudes, behaviors, how to solve work tasks, collaborating with colleagues, results, etc. At the end of a stage (unit of study, semester or even school year), these may indicate the progress of the student.

The Learning Diary records in a formal way information such as records of daily results, books read, themes, projects. The objectives are scored and checked at the end of the learning unit to reveal the understanding of the subject matter up to that point.

d) *Strategies for understanding the degree of understanding and supporting metacognition* in order to stimulate students to think by themselves, to be aware of the role they play in their own education act. Characteristic of formative assessment is based on the following tools: journals (written, video or photo), observation, interview, informal questionnaire, conferences and written or oral verification.

e) Questioning as a strategy is manifested by asking students questions to stimulate them, involve them, establish logical links between interdisciplinary topics and their reflection in everyday life. For this strategy to work effectively, the following indications are considered:

- it is recommended that after teaching a lesson item, students to be allowed to review what has been discussed for a few minutes, then check whether they have understood and continue the lesson or resume the item as appropriate;
- Multiple questions are not used, as there is not enough time to think and students would be in difficulty;
- if the answer is not the best, it is not criticized but asks whether there is another person with another answer, in order not to discourage and finally, the teacher clarifies the question whether he or she still needs to do this;
- During this activity verbal reward is avoided to stimulate as many participants as possible to the discussion;
- Pupils have to support their ideas through detailed explanations, examples;
- It is required to summarize the main idea of the material taught;
- the teacher listens to students' explanations; when necessary the teacher repeats what the student said to say something is wrong or just to check if the students were being careful.

When the student attempts to formulate an explanation, the teacher must be careful not to interrupt or comment on the response received. Non-verbal communication (for example, visual contact, and warm expression, patient) is used. The teacher also follows the activity of the other students (high-handed, looking at the teacher, willingness to communicate, etc.) to engage them in the debate.

The written form of assessment stimulates students to overcome emotional barriers and to present their ideas in an explicit way, and the teacher can better observe how each student thinks (against a debate when a student's response can be influenced by the presence of class).

f) *The failure to understand and verify the formation of skills* is done through a summative assessment and is characterized by providing students with opportunities to demonstrate progress.

The evaluation is materialized by presenting the papers and outcomes of the practical activities carried out by the students, supporting portfolios or initiating conferences.

It can be done by making reports, presentations using NTIC or role-playing games. The student builds up and structures his own speech, becomes an active participant and assumes responsibility for the facts presented by conferences. This is supported and guided by the teacher. An advantage of this is to increase confidence and achieve educational activity in a positive and pleasant way.

3. Performing evaluation through the usage of the computer

The new information and communication technologies applied in the field of education aim at: stimulating thinking and issuing quality judgments, developing technical skills ("the informational era"), encouraging creativity and innovation. Technology supports the educational act, especially by increasing student motivation as these new means of achieving learning and, implicitly, evaluation are very attractive to pupils and, last but not least, ICT can be adapted to the level or educational needs while respecting the goals previously set.

Another great advantage is the time-saving in the evaluation and the wide range of technical tools at the disposal of anyone. Both the teacher (especially if we refer to programs that are not specifically created as educational software) that can transform any tool in the educational medium (eg. a movie on youtube) and students can access, use for educational purposes or can work home / online for projects.

Computer assessment has two main components:

• *Appreciation of multimedia products generated by students;*

• *Appreciation of students' practical performance.*

Appreciation of multimedia products generated by students. In the assessment, pupils may be required to carry out various projects using NTIC (new information and communication technologies). These are called multimedia products and can take the form of: posters, multimedia presentations, brochures, sites, blogs, etc. This type of student's work has the benefit of not being dependent on the existence or availability of certain educational software in the school unit, and can even work from home with a computer connected to the Internet and with the Microsoft Office array of programs installed (or other similar software).

The benefits are numerous, including the students' inclination to new technologies, which makes the activity a "pleasant work", the pupils to be more enthusiastic and more involved than to classical forms of assessment.

We can qualitatively evaluate products of this type by using *checklists, rating grids, and scoring guides*. Once the project theme is established, the teacher presents the objectives, scoring criteria, standards to be achieved. In this way students can evaluate themselves the resulting product by becoming responsible and motivated to increase their own performance. The teacher can give them the choice of how to make the theme, the type of format, the subject, etc. depending on the student's preferences, abilities or inclinations.

Appreciation of students' practical performance. Except for written assessments, and in the light of new information and communication technologies, we come across the notion of "performance assessment". This is the assessment through practical tasks with well-defined tasks and carried out through the use of specific tools or equipment or materials for the assessment of factual, conceptual or procedural knowledge.

This reflects discovery based on practical activities. It is attractive for all who perceive a discipline not only as a corpus of knowledge, but also as a product of inquiry, dependent on the use of utensils and technology (Hadzilacos, T.).

The new information and communication technologies support learner-centered learning / assessment as they allow the modification or development of training practices to facilitate the development of all students through their mechanism: the use of predefined criteria, the observation of the process but also of the product, all of which lead to a careful analysis of student performance.

The assessment is based on the creation of a more realistic life environment, it can create a hypothetical situation requiring the use of certain skills or competences on the part of the student (also the teacher has to present certain technical skills otherwise he can not use these new educational methods).

Conclusions

Any educational approach must present a measurable outcome, quantified from a quantitative and qualitative point of view. Evaluation is a constituent part of the educational process with multiple roles and implications.

Collecting information about learners' understanding at the beginning of a learning unit supports the teacher in examining pupils' learning needs and also in planning their teaching activities. The learning process must be observed and adapted throughout its lifetime, aiming at the continuous improvement, motivation and support of students, and finally, materializing through examinations aimed at directing future specialists to the appropriate fields of activity according to the requirements of the labor market.

Modern education is concretized by engaging during classes in the usage of gadgets (for example: projector, whiteboard, computer, tablet, etc.) in order to ease learning through the multitude of tools and devices available at all times and with numerous benefits listed in chapters above. Virtually everything we could achieve through traditional means and methods can be exponentially met by new information and communication technologies but with the advantage of being attractive by increasing motivation for study and success.

Through the usage of the new technology means during school classes, students can self-assess and get feedback on their results.

In the context of exam testing, student assessment through new information and communications technologies saves time and improves confidence in the objectivity of correcting results.

The new technologies environment is full of useful, attractive and exciting possibilities and options that are expected to be used, combined or interpreted for educational purposes.

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