Development of Formative Evaluation in the Teaching-Learning Process

Xoshimova Shoira Safarovna

Senior Lecturer, Jizzakh Polytechnic Institute, Jizzakh, Uzbekistan

ABSTRACT

The process of improving Uzbekistan higher education is based on the need to train a type of professional capable of responding to the demands of social demands with a solid theoretical and practical training. When a diagnosis was carried out in the faculty in technical direction, it was found that it presented difficulties in relation to the didactics of evaluation, together with the tendency to apply qualifying evaluation without taking sufficient account of training. A literature review was carried out with the aim of reflecting on how to apply it correctly in the teaching-learning process. The aspects addressed show the agreement of numerous authors from different countries and theoretical approaches in the recognition and verification of their current problems, such as their conceptual and methodological reductionism, their subordination to needs and demands external to the pedagogical process, and their effects and consequences.

KEYWORDS: *educational evaluation, students, technical education, differential approach*

INTRODUCTION

The process of improving Uzbekistan higher education is based on the need to train a type of professional capable of responding to the demands of social demands, and at the same time it is important to guarantee a graduate with a broad profile and a solid theoretical and practical training capable of becoming a specialist throughout his or her life. For this reason, it is necessary to adequately guide the different components of the teaching-learning process to avoid the latent insufficiencies in the processes of training and overcoming professionals. Some of the answers to these insufficiencies can be found in the lack of a full awareness of the scope of evaluation, of its functions and application. Likewise, there are failures in the planning and organization of evaluation that violate the very essence of the educational teaching process.

Conceptualizations of evaluation throughout history have been linked to national and cultural positions, curricular and pedagogical models. The most accepted is that whose meaning points toward that of appreciating, analyzing, or fixing the value of a thing; that is, associating it with a permanent numerical value. Currently, there is a strong preference to conceive of it from a developmental perspective that displaces the rigid criteria that still persist and produces a break with the old schemes that are used, and to adopt a new assessment culture that involves building a positive communicative interaction between teacher and student.

This idea is the basis of the scientific purpose of reconstructing a conception of learning assessment from the most general theoretical perspective of human development, and of the goals that a given society sets itself in the training of new generations of professionals. The above leads to delineating and arguing the characteristics and conditions of a formative assessment of learning.

The faculty of the Department of Logistics has a heterogeneous composition. In general, its members have an adequate didactic and methodological preparation. Some of them come from teaching careers, but most are trained by the health sector. Their didactic and methodological knowledge comes from classes received during their residencies or in later courses.

The authors of this article have noted, through the minutes of departmental and subject group meetings and other forms of methodological work, difficulties relating to the didactics of evaluation. This is linked to the trend towards greater attention to accredited or qualifying evaluation, with a predominance of a formal approach, which should be transformed in terms of improving their practices, and assume the training approach.

For the reasons explained above, the authors have set as an objective of the following literature review, to reflect on how to correctly apply formative assessment in the teaching-learning process.

DEVELOPMENT

Learning assessment: a complex process the search for excellence in higher education is a demand that has lasted throughout history and currently involves all those involved in educational tasks and all components of the training process of future professionals. In Uzbekistan, this search is manifested in the desire for continuous improvement of university education on a scientific basis, which supports the decisions and daily work of educational institutions and promotes, at the same time, the development of pedagogical research as a need for improvement.

The assessment of learning is, in this context, a topic of particular interest because of its complexity and the differential approach of many unsolved problems. The review of the literature shows the agreement of numerous authors from different countries and theoretical approaches, in the recognition and verification of current problems of assessment, such as its conceptual and methodological reductionism, its subordination to needs and demands external to the pedagogical process, the effects and undesired consequences, among other problems.

UP-5847 "About Approval of the Concept of Development of System of the Higher Education of the Republic of Uzbekistan till 2030". Its purpose is to verify the degree of compliance with the objectives formulated in the plans and programs of study of higher education, through the assessment of knowledge and skills that students are acquiring and developing, as well as the behavior they show in the educational teaching process. It constitutes, in turn, a means for feedback and regulation of this process".

For the Uzbekistantechnical education system, the evaluation of learning implies the control and assessment of the knowledge, skills and habits, as well as the modes of action that students acquire through the educational teaching process, in accordance with the proposed objectives of each subject, stay or rotation in particular and the study plan in general, which makes its own direction possible.
Evaluation can be structured in all organizational forms of teaching such as lecture or master class, practical classes and workshops, course, group activities and particularly in clinical practice, in the case of technical sciences.

Evaluation as a component of the teaching-learning process

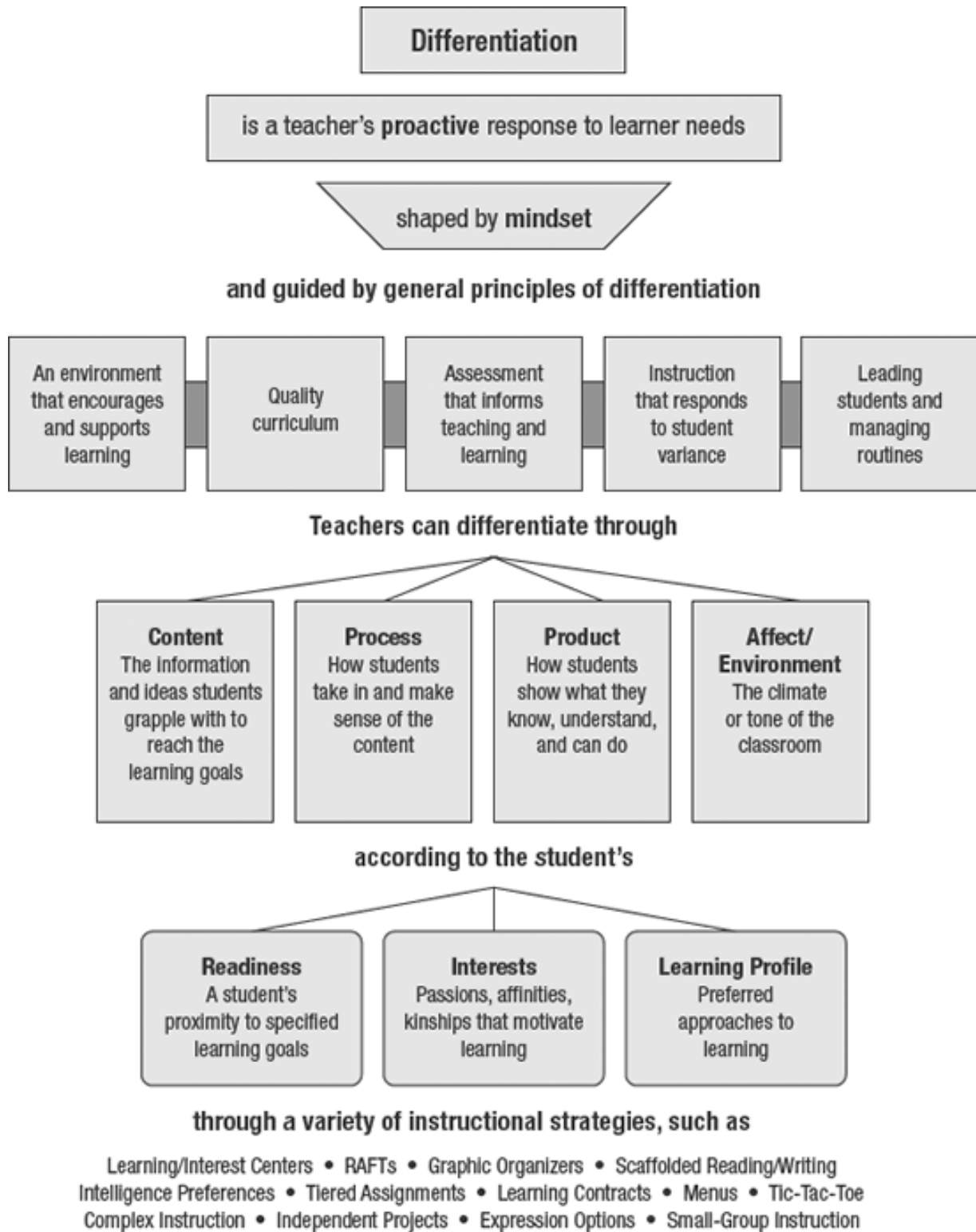Within the components of the teaching-learning process, assessment is the element that is directly related to each one of them since it is in charge of stimulating and measuring the achievement of the objectives through a group of criteria. They are related to the fulfillment of the purpose or goal for which they were set, the achievement of the end for which they were set and thus achieve gradual transformations in the contents that group together in the system of knowledge and skills, in the experience of creative activity and in the modes of action. In this way, the different levels of assimilation are reached.

There is a direct relationship between the system of knowledge, skills and levels of assimilation, on the one hand, and the organizational forms of teaching, on the other. It is in the latter that the structure and group of joint activities developed by teachers and students are established. They are reflected through the methods that order the internal structure of the teaching-learning process, which according to the level of assimilation that is proposed may be productive or not. According to this classification, the actors will use the different types of media at their disposal as a means of communication and that serve as support for the methods for the final achievement of objectives.

Functions of the evaluation

➢ **Certifier**: it confirms to society that certain objectives have been achieved.

➢ **Selective**: it allows students to be placed in different positions and to dispense with those who do not reach the minimum required at certain times or stages.

➢ **Comparative**: the student compares himself with the results of other colleagues and the teacher compares himself with the results of other teachers.

➢ **Control**: the legal obligation of teachers to qualify students gives them power and control.

Training: is that which contributes to the development of the student in accordance with the essential regularities of the process of formation of the individual and with the social purposes that signify such formation in society. Furthermore, it is capable of detecting progress and difficulties in the teaching-learning process, determining how far one has come and how far one can go. It informs the student of the findings, which allows the teacher to adapt the curriculum and the initial objectives, and gives him/her the possibility to adjust the process progressively.

Differentiation

is a teacher's **proactive** response to learner needs

shaped by **mindset**

and guided by general principles of differentiation

| An environment that encourages and supports learning | Quality curriculum | Assessment that informs teaching and learning | Instruction that responds to student variance | Leading students and managing routines |

Teachers can differentiate through

| **Content** The information and ideas students grapple with to reach the learning goals | **Process** How students take in and make sense of the content | **Product** How students show what they know, understand, and can do | **Affect/ Environment** The climate or tone of the classroom |

according to the student's

| **Readiness** A student's proximity to specified learning goals | **Interests** Passions, affinities, kinships that motivate learning | **Learning Profile** Preferred approaches to learning |

through a variety of instructional strategies, such as

Learning/Interest Centers • RAFTs • Graphic Organizers • Scaffolded Reading/Writing
Intelligence Preferences • Tiered Assignments • Learning Contracts • Menus • Tic-Tac-Toe
Complex Instruction • Independent Projects • Expression Options • Small-Group Instruction

Picture-1.Key Elements of Effective Differentiated Instruction in Education (source: http://www.ascd.org)

Diversity of criteria related to formative evaluation

The ideas about what education and educational practices should be, (including evaluation systems) depend, as we have already explained, on ideological and cultural positions and curricular and pedagogical models. López Pastor states that "... a model of evaluation must be sought that is formative, continuous and integrated into the development of the curriculum, collaborating in the improvement of the same and of the students' own learning processes". The authors share this criterion, considering it to be valid and adequate for evaluating the processes of human formation.

Brown interprets formative evaluation as: "... all processes of verification, assessment and decision making whose purpose is to optimize the teaching and learning process that takes place, from a humanizing perspective and not as a mere qualifying end". It establishes numerous points of contact with other authors.

Casanova uses different terms; he states that it is common for teachers to confuse "formative assessment" with "continuous assessment" and often misinterpret "continuous assessment" as the ongoing performance of tests, exams and grades, which should really be called "continuous grading". The concept of "continuous assessment" refers to that which is carried out in the classroom on a daily basis, usually for training purposes, by systematically collecting information on the learning process of each individual student. According

to the authors, this type of assessment is also considered to be systematic or frequent, although it is not necessary to give it a quantitative grade.

Essential coincidences in the processes of formative and qualifying evaluation

The review found that there are many points of contact regarding the essential requirements that both the formative and qualifying assessment have to meet:

Validity: it shows to what extent the evaluation instruments "really" measure what they are expected to measure, that there is a correspondence between what is to be evaluated and what is evaluated.

Reliability: since it is the quantitative or qualitative expression of the reproductivity with which an instrument measures the same attribute. It ensures the stability of results over time and among teachers.

Educational impact: because it includes the stimulus for study and the opportunity to generate formative feedback.

Acceptability: that the instruments are accepted ("that they like") among students and teachers; how many times when preparing the final exam agendas the expression "I like this agenda more than that" is shared in spite of the fact that they all measure the same objectives.

Cost in human, material and economic means: a demand that influences a lot the moment of making exams, because sometimes, in spite of the wishes, for economic reasons it is necessary to limit the printing, and that to a certain extent restricts the creativity when making certain evaluative instruments.

Once these requirements are known, the following questions must be considered:
What can't be compromised in formative evaluation?

How is it possible to know if the system of formative evaluation has a poor impact?

Does the formative assessment system encourage students to devote the established workload to their subject?

In summary, it is pointed out that the formative impact allows the student to be stimulated to reason, to take risks, to err and to learn from his or her mistakes. This impact becomes deficient when it is not possible to motivate and stimulate learners to overcome new goals. Finally, each subject, according to its system of knowledge and skills, requires that students dedicate a certain amount of time to self-study; if this is not achieved, the entire process must be reviewed and errors detected that do not allow progress to be made.

Advantages and limitations of formative evaluation
Hamodi and Tejada Fernández consider that, like any process, formative evaluation has many advantages:
Measuring what you do.

Great validity in professional training and in values, habits and skills. Measurement of multiple attributes.

Measuring performance over time.

Multiplicity of observers, (teachers, students, technicians, accompanying patients) Constructive feedback.

Availability of various scenarios.

Information to students about their training.

Coincidentally, these authors and others manage a series of limitations in the development of formative evaluation that depend to a greater extent on subjective issues such as: the lack of standardization since there is no scheme for its development, the little instrumentation since well-trained evaluators are indispensable to avoid improvisation, and the non fulfillment of the drawn up objectives, at the moment of valuing the performance of the students. Nevertheless when doing a correlation, it is possible to be appreciated that the advantages are much greater, since the limitations can be solved with the educational and systemic work of the teaching staff.

López Pastor clarifies this section by addressing aspects of the advantages of formative evaluation. It allows for the diagnosis of weaknesses in students, favors dialogue between teachers and students, stimulates self-evaluation, helps develop skills for independent study, informs students of their insufficiencies and deficiencies, is as frequent as necessary, and measures the progress achieved and its trend in the educational teaching process. It clarifies that formative evaluation can never be used to make a certifying judgement, which is what other works consulted and the authors of this review agree with.

Trends in Formative Evaluation
The important issue of the trends through which the formative evaluation must pass is pointed out in government decrees, and other revised bibliographies, by common agreement:
➢ The need to transform evaluation practice from a training approach.
➢ The need to have an inclusive conception of evaluation, which is considered the essence of the evaluation process by the authors.
➢ The need for training proposals to transform traditional evaluation practices into training and development approaches.
➢ The incorporation of the student into the evaluation process.

For the adequate development and implementation of these trends in formative assessment, the teacher must experience a change with respect to his or her conceptions and practices about the assessment category. The teacher is the evaluator and the student is the evaluator who "needs" to be qualified.

A theoretical-methodological preparation of the teacher as a mobilizing agent of change should be encouraged, which will allow him/her to have a formative approach to evaluation, considering the instructional-educational-developmental aspects.

In relation to this world trend on the styles and changes that the teacher should introduce and the full incorporation of the student to the educational teaching process as a

protagonist, with the use of diagnostic tests, self-assessment materials, presentations, observations, diaries, simulations or oral questionnaires, it can be seen how within the process of formative evaluation different terminologies ("instruments", "tools" and "methods") are currently used to carry out the "formative evaluation techniques" to be used in the different organizational forms of teaching.

Mazur, referenced by Pinargote Vera, referred to the fact that "... what determines how students study is the method by which they will be evaluated, that is, it is the evaluation that directs what the students do to overcome it (and not the desires of the teachers...)". This Harvard professor, since the 1990s, has created and popularized much more effective alternatives to the "traditional reading" "master class or lecture" in order to teach and to make students understand. He devised the "peer instruction" or "accompanied instruction" method, which consists of posing (concept test) conceptual questions to his students to ask them to answer by predicting what should happen in a hypothetical situation by applying the principles of the discipline to the questions and to discuss the justifications between groups, with others who have chosen a different answer. After the discussion the students answer the question again, those who have changed their minds are consulted as to why they changed their minds, the discussion is closed and a new question is asked. Mazur found that with this methodology, the students doubled the average learning gains in each class, a point agreed upon by the authors, who have begun to use some variants of this method during the development of teaching.

Assessment tools: classification and terminological confusion
Castejón presents a series of tools that are used by teachers to collect the necessary information in the assessment process, although he acknowledges that it is difficult to separate the instruments from the assessment strategies and techniques.

Here the "assessment instruments" are classified according to their oral, written or observational manifestation. Thus, some examples of each of them are
➢ Instruments with a predominance of written expression: exam, written work, essay, poster, report, project, field notebook, practical cards, diary, folder or dossier, portfolio and report.
➢ Instruments with predominance of oral expression: presentation, debate, interview, group interview, discussion group, round table, panel of experts, lecture and communication.
➢ Instruments with a predominance of practical expression: representation, demonstration or performance, simulation, project development with a practical part, research and supervised practice.

It is then explained that it is essential for teachers to use "some kind of record that allows them to see how they are doing in a framework of formative and continuous assessment" and reference is made to checklists (whose usefulness is to know whether or not certain acquisitions are present) and checklists (to reflect the different degrees of them).

Tejada Fernández presents an article on the evaluation of competencies in non-formal contexts, where he speaks of "devices" and "instruments" of evaluation, using them as synonyms.

Recently, Brown published a book focused on the assessment of skills and competencies in higher education in which multiple proposals on this subject are contributed. In this case, it speaks of "methods and approaches", although some terminological confusion is generated between the two categories. The following are considered "approaches": computer-assisted assessment, self-assessment, peer assessment and group work, and the following are considered "methods": essays, portfolios, theses, exams, computer-assisted assessments, open book tests, assessed seminars, simulation tests, etc. But on no occasion is a definition given for these terms; one can even see how they include "computer-assisted assessment" in both approaches and methods.

This review of the literature on evaluation has shown how it is currently difficult to find clear distinctions between the concepts of "means", "techniques" and "instruments" of evaluation, and how, so far, the following terms are spoken of in a somewhat chaotic manner, using as synonyms or related words: instruments, tools, techniques, resources, methods, approaches, devices and procedures of evaluation. The authors of this article consider that they are listed intermingled, confusing each other, calling the same things differently and vice versa, without following a single classification, which implies very little rigour and leads to considerable terminological confusion.

The first rigorous classification, with an exhaustive definition, is found in the work of Ibarra Sáiz, where the means, techniques and instruments of evaluation are defined very clearly and precisely as follows:
➢ **Means of evaluation**: "evidence or proof that serves to gather information about the object to be evaluated". These evidences, products or actions made by the students are the means that inform about the learning results and that the evaluator uses to make the corresponding evaluations. They vary according to the type of competence or learning that is to be assessed. Some examples are: to assess application and research skills (research project); to assess professional skills (case study); to assess communication skills (presentation or interview).
➢ **Evaluation techniques**: "strategies used by the evaluator to systematically collect information on the object evaluated. They can be of three types, observation, survey (interviews) and documentary and production analysis".
➢ **Evaluation instruments**: "real and tangible tools used by the person being evaluated to systematize his/her assessments on the different aspects". Some examples are: checklists, estimation scales, rubrics, semantic differential scales, decision matrices or even mixed instruments where more than one is mixed.

Despite such clear definitions of assessment means, techniques and instruments, there is a gap in this classification, as there is no room for student participation in the assessment, which is considered essential during the assessment process related to this article. In other words, this classification does not contemplate self-evaluation, peer evaluation, or shared evaluation. Formative evaluation must

be shared and must specify the participation of students in the evaluation process. It is for this reason that, although the definitions of the means, techniques and instruments of Ibarra Sáiz seem very clear, the classification, according to the opinion of the authors of this research, is incomplete.

Proposal for a new classification system

For all the above reasons, the authors consider that a new system of classification of the means, techniques and instruments of formative evaluation of learning is necessary, which takes into consideration the students and their participation in the evaluation process. To this end, they share some criteria that appear in the bibliography and design the following proposal:

The means of assessment are any and all student productions that teachers can collect, view and/or listen to, and which serve to demonstrate what students have learned throughout a given process. They can take three different forms: written, oral and practical.

Assessment techniques are the strategies that teachers use to collect information about the productions and evidence created by students (from the media).

If the medium to be evaluated is written, the technique of documentary and production analysis (or review of works) will be used; if the medium to be evaluated is oral or practical, observation or analysis of a recording (audio or video) will be used. The aim is for the student to participate in the evaluation process. Formative evaluation techniques may be as follows:

Self-evaluation: evaluation by the student of his/her own evidence or production, according to previously negotiated criteria. It can be carried out through self-reflection and/or documentary analysis.

Peer evaluation or co-evaluation: process by which the student evaluates his/her classmates in a reciprocal way, applying evaluation criteria that have been previously negotiated. It can be carried out through documentary analysis and/or observation.

Collaborative or shared evaluation: dialogical processes that teachers maintain with students on the evaluation of the teaching and learning processes that have taken place. These dialogues can be individual or group. It can be carried out using interviews between teachers and students.

By means of this proposal, the authors intend to clarify some aspects in the terminology referring to evaluation, specifically on the means, techniques and instruments used to carry it out; but always from the training and shared perspective; in accordance with what has been revised. It is necessary to unify terminology on this subject, that is, a common language is needed in the evaluation of student learning.

Factors contributing to the improvement of the educational quality of evaluation

There are several factors that contribute to the improvement of the formative quality of evaluation:

Working in teams of students doing research and using information sources, solving problems and developing new ideas.

Use of inductive methods that allow the exercise and evaluation of skills, even imitating reality with dramatizations, defense of cases, brainstorming, etc.

Evaluation in conditions of access to information in open book exams and in formative evaluation teams: Technique of Evaluation and Immediate Feedback (TERI)

Emphasis during the process on the educational aspect, together with the stimulation of the student and the generation and collectivization of feedback.

This procedure ensures that the formative evaluation is a working instrument for the student that allows them to self-control and self-evaluation, bringing them to know the immediate result of the processes. This increases self-study and independent work, the student gets feedback and allows the teacher to correct the direction of the process by making new assessment instruments that lead to new grades and results. All of the above contributes unquestionably to the improvement of the pedagogical mastery as a result of hard methodological work.

CONCLUSIONS

It is essential to have an integrative conception of evaluation, which is considered the essence of the evaluation process. This allows us to have a competent teacher, able to apply an adequate formative evaluation effectively through the use of diverse methods, according to the objectives expected from the students according to their level of studies. An adequate formative evaluation ensures that the student develops self-regulation mechanisms always aimed at achieving new learning goals.

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