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Original article

## Study of formative assessment in the discipline Theory and Practice of Physical Education

### Estudio de la evaluación formativa en la disciplina Teoría y Práctica de la Educación Física

### Estudo da avaliação formativa na disciplina Teoria e Prática da Educação Física

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### ABSTRACT

The evaluation as a component of the teaching-learning process has the purpose of verifying the degree of fulfillment of the objectives formulated in the plans and study programs of Higher Education; this in turn constitutes a way for feedback and regulation of said process. From this perspective, the learning evaluation process is analyzed from its formative function, as it is one of the most relevant activities in university educational contexts, through which it is possible to determine the learning achieved by the student



and improve the teaching process. In the Cuban university context, new transformations are required in the evaluation of learning in its formative nature; therefore, the diagnosis of potentialities and needs is pertinent. The present article had the purpose of analyzing the results of the formative evaluation in the Physical Culture and Sport degree, specifically in the discipline Theory and Practice of Physical Education with the application of theoretical and empirical methods such as: analytical-synthetic, observation, surveys, document analysis and methodological triangulation, for which a sample of 27 professors was used, 133 students of the 2nd year of the career. As results of the study, inconsistencies and needs were detected in the evaluation system to transform the modes of action of the teacher and the student, due to the scarce planning, organization, regulation and control for self-evaluation and co-evaluation as ways to enhance formative evaluation.

**Keywords:** Formative evaluation; Physical Education.

## RESUMEN

La evaluación como componente del proceso de enseñanza-aprendizaje tiene el propósito de comprobar el grado de cumplimiento de los objetivos formulados en los planes y programas de estudio de la Educación Superior; esto, a su vez, constituye una vía para la retroalimentación y la regulación de dicho proceso. Desde esta perspectiva, se analiza el proceso de la evaluación del aprendizaje desde su función formativa, por ser una de las actividades de mayor relevancia en los contextos educativos universitarios. Mediante ella, es posible determinar los aprendizajes que logra el estudiante y mejorar el proceso de enseñanza. En el contexto universitario cubano, se exigen nuevas transformaciones en la evaluación del aprendizaje en su carácter formativo, por lo que resulta pertinente el diagnóstico de potencialidades y necesidades. El presente artículo tuvo el propósito de analizar los resultados de la evaluación formativa en la carrera licenciatura en Cultura Física y Deporte, específicamente, en la disciplina Teoría y Práctica de la Educación Física, con la aplicación de métodos teóricos y empíricos, tales como: el analítico-sintético, la observación, encuestas, el análisis de documentos y la triangulación metodológica, para lo que se utilizó una muestra de 27 profesores y 133 estudiantes del 2do. año de la carrera. Como resultados del estudio, se detectaron incongruencias y necesidades en el sistema de evaluación para transformar los modos de actuación del profesor y el estudiante por la escasa planificación, organización, regulación y control para la autoevaluación y la coevaluación como formas de potenciar la evaluación formativa.

**Palabras clave:** Formative assessment; Physical education.

## RESUMO

A avaliação como um componente do processo ensino-aprendizagem tem o propósito de verificar o grau de cumprimento dos objetivos formulados nos planos e programas de estudo no Ensino Superior; isto, por sua vez, constitui um meio de retroalimentação e regulamentação deste processo. A partir desta perspectiva, o processo de avaliação da aprendizagem é analisado desde sua função formativa, pois é uma das atividades mais relevantes nos contextos educacionais universitários. Através dele, é possível determinar o aprendizado alcançado pelo aluno e melhorar o processo de ensino. No contexto universitário cubano, são necessárias novas transformações na avaliação da aprendizagem em sua natureza formativa, razão pela qual o diagnóstico de seus potenciais e necessidades é pertinente. O objetivo deste artigo foi analisar os resultados



da avaliação formativa no curso de graduação em Cultura Física e Esporte, especificamente na disciplina de Teoria e Prática da Educação Física, com a aplicação de métodos teóricos e empíricos, tais como: analítico-sintético, observação, levantamentos, análise documental e triangulação metodológica, para os quais foi utilizada uma amostra de 27 professores e 133 alunos no segundo ano do curso. Como resultados do estudo, foram detectadas incongruências e necessidades no sistema de avaliação para transformar as formas de atuação do professor e do aluno devido ao escasso planejamento, organização, regulamentação e controle para auto avaliação e co avaliação como formas de reforço da avaliação formativa.

**Palavras-chave:** Avaliação formativa; Educação física.

## INTRODUCTION

The new demands in Cuban Higher Education constitute premises for the transformation of the teaching-learning process. In this sense, it is a matter of empowering the students' protagonism in the training process and resizing the role of evaluation in its qualitative and formative character.

The formative character of evaluation in Higher Education offers an adequate pedagogical activity in a systematic, orderly way, where historical-cultural experiences are encouraged. This makes it possible for the student to improve the skills, attitudes and values that are expressed in their way of professional performance.

From this perspective, [Ortiz and Sanz \(2016\)](#); [Castillo \(2018\)](#) agree that the task of evaluation involves integrating it permanently during learning activities. [Bertrán Lamorú \(2020\)](#) suggests that less traditional forms of evaluation should be used and that students should be made aware of the criteria used to assess their performance, in order to help them develop their capacity for self-evaluation, critical and self-critical spirit, accompanied by the criteria of their peers through self-evaluation and co-evaluation.

In the specialized literature, there are several classifications and nominations related to the functions of learning evaluation. Among them, the social, control and pedagogical functions; the latter is considered as a diagnostic, prognostic, school environment creator, learning reinforcement, resource for individualization, motivational feedback and preparation of students for life [Garcés \(2015\)](#); [Ravela, Picaroni & Loureiro \(2017\)](#) and [Moreno \(2018\)](#). Others offer criteria on functions such as diagnostic, summative and formative evaluation.

The formative function of evaluation is a term introduced in the 1960s and referred that students could learn most of the contents delivered by the school, as long as their specific learning rhythms and modalities were considered ([Pino, Clavero, Ayala and Falcón 2017](#)).

Thus, the fundamental characteristics of formative evaluation are: feedback and regulation of learning by assessing the knowledge and skills that students acquire and develop, [Martínez and Arrieta \(2016\)](#); [Bizarro, Sucari and Quispe \(2019\)](#). In the field of Physical Education, some researchers [Ruiz \(2012\)](#), [Hernández and Mola \(2016\)](#) highlight formative evaluation as an emerging issue due to the results obtained in this specialty, which reveal the traditional nature of evaluative practices due to the lack of clarity for its application, as well as the insufficient use of appropriate instruments that enable the necessary regulation and feedback.



In the formation of the Physical Culture professional, since its creation, research projects have been elaborated with proposals for changes in the learning evaluation system of the students who study the discipline Theory and Practice of Physical Education, which object of study is directed to the particularities of the teaching learning process, based on the integral-physical-educational approach.

The evaluation of learning from the integral-physical-educational approach allows for dynamic work, in which decision-making is incorporated based on the teacher's expert judgment and knowledge from daily contact with students, as well as the evidence collected for feedback.

This form of evaluation is of great importance in the integral formation of students because it requires a personalized, conscious and systemic process that occurs in cooperation with the teacher and the group.

Hence, the teacher must create a space for self-reflection and self-evaluation of teaching activities, which enables the systematicity of this process and raises the student's knowledge for an objective self-assessment, which can positively or negatively influence their performance.

However, in the educational practice of the discipline Theory and Practice of Physical Education, behaviors that reflect the presence of a traditional didactics sometimes coexist. This is evident from the excessive use of reproductive methods, as well as an evaluation that focuses on results, characterized by the issuance of a value judgment at the end of each teaching period.

These evaluative practices do not favor the leading role of students, as they do not promote the regulation and feedback of their own learning, which is contrary to the formative approach that is required. In addition, there is insufficient evidence of specific orientations for the use of different techniques and instruments that favour formative evaluation.

The above-mentioned appreciations are the basis of a problem to be solved for which the objective was determined: to diagnose the current state of formative evaluation in the discipline Theory and Practice of Physical Education.

## **MATERIALS AND METHODS**

The research was characterized by its qualitative approach, as it dealt with the processes and experiences manifested by the participants (teachers and students), who were interested in their perceptions, attitudes and modes of action. For this, several methods were used such as: document analysis, observation and surveys that were used to identify the shortcomings in the evaluation process of the discipline Theory and Practice of Physical Education.

In order to lay the foundations that allowed an adequate starting level and to inquire about formative evaluation, the discipline Theory and Practice of Physical Education was selected, since it constitutes one of the spheres of action of the Physical Culture professional and covers more time in the curricular map of the career, besides being one of the spheres with the highest level of dissatisfaction on the part of the students. This



indicated the need to transform the direction of the teaching-learning process, particularly in the evaluation system.

The research was conducted at the University of Physical Culture and Sports Sciences "Manuel Fajardo", from the academic year 2016-2017; it had a predominantly qualitative approach because it focused on the study of formative evaluation from the complexity and subjectivity manifested by the participants in this process.

In the initial verification, data were collected from three fundamental sources: teachers, students and the curricular design of the discipline. In this sense, 27 teachers were selected intentionally, under the criterion of having more than ten years as a specialist in Physical Education. Also 133 students of the second year were selected, for having taken the subjects (Basic Gymnastics, Athletics, Basketball, Soccer and Theory and Methodology of Physical Education) that were used for the analysis of the curricular design.

In the verification of the current state of the formative evaluation developed, a pedagogical diagnosis was carried out that allowed to define weaknesses in the discipline Theory and Practice of Physical Education in three phases: the first one directed to the preparation, organization and planning of the diagnosis. The second phase was the development and application of the diagnosis. The third phase was the culmination of the diagnostic process.

## RESULTS AND DISCUSSION

The study of formative assessment in the discipline Theory and Practice of Physical Education contemplated several phases:

- A first phase of planning and organization of the diagnosis that had as an essential objective, the planning for the description of the representations that teachers and students had. Starting from the definition of the objectives, the determination of the contents and the elaboration of the instruments.
- A second phase for the application of the diagnosis, its essentiality was in the application of the selected research instruments to obtain the necessary information from the different sources.
- The third phase of culmination of the diagnostic process had as objective: to analyze the information gathered for the identification of what the professional of the discipline Theory and Practice of Physical Education lacks in order to perform effectively in the formative evaluation process.

From the application of the surveys to the teachers to verify the methodological didactic preparation that they had with respect to formative evaluation, weaknesses were identified such as: the scarce planning, organization, regulation and control for self-evaluation and co-evaluation. Fifty-two percent considered that their preparation was not good with respect to the subject. As well as 59 % of the professionals referred that the planning, organization and control of the formative evaluation in the methodological work of the discipline was insufficient. Forty-four percent agreed that the theoretical-practical orientations for the use of adequate instruments that would allow them to carry out formative evaluation were scarce. All this reinforces the criterion that the teachers



had good preparation when carrying out evaluative practices directed to the results of the student's learning, that is to say, a summative evaluation.

In the review and analysis of the documents, the evaluation system for the degree course in Physical Culture states that it must have a formative character, which implies, from this perspective, that self-evaluation is becoming an urgent necessity in the formative process of the student's personality. However, there are inconsistencies in the derivation of the objectives of the subjects related to the self-evaluation declared in the professional's model.

The fulfillment of these conditions requires an evaluation system duly structured by fundamental components such as: criteria, techniques, instruments and responsible subjects that allow planning, ordering and executing an evaluation in accordance with the new demands of the training model.

In the research, the analysis of the programs of the subjects of the discipline (Basic Gymnastics, Athletics, Basketball, Soccer and Theory and Methodology of Physical Education) was pertinent; in them, the objectives and how the system of evaluation of the students' learning was oriented were analyzed.

The conception of evaluation that was held in these subjects showed the absence of a formative approach, working with a fragmented methodological output, devoid of the continuous and regulatory character to achieve the transformations in the teaching-learning process. For this reason, it is revealed as a weakness of the analysis of the documents: inconsistencies in the derivation of objectives declared in the model of the professional that propitiate, from the discipline and subjects, to carry out the formative evaluation.

In the analysis of documents, it was also found that teachers designed teaching tasks to evaluate learning in which other disciplines of the course were integrated; in this regard, it is necessary to propose new activities that facilitate a better development of this integration.

Likewise, it was shown that, on occasions, they favor self-assessment and coevaluation processes and emphasize feedback to correct errors in time. However, in spite of dispensing with feedback, in no way do they readjust the teaching process based on the results obtained in the students' learning.

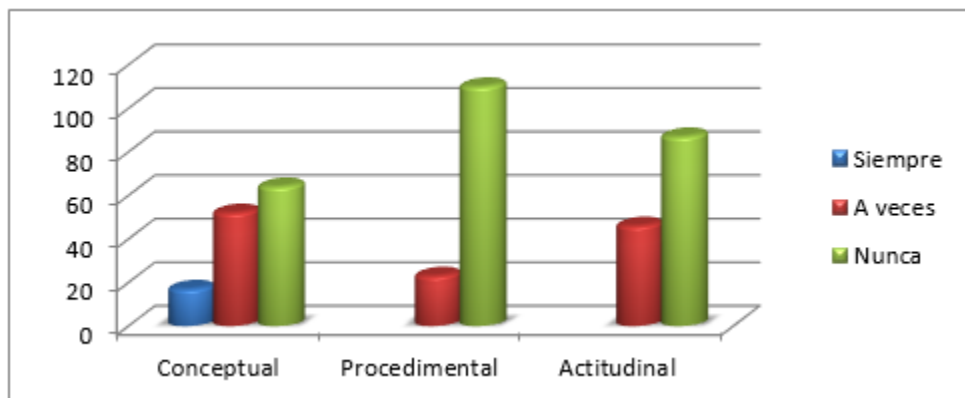
In the use of various innovative didactic resources for formative evaluation, the use of concept maps and participatory techniques to evaluate conceptual contents was always observed in the subject of Theory and Methodology of Physical Education. The subjects *Basic Gymnastics, Athletics, Basketball and Football* frequently used oral and written questions, observation guides for theoretical and practical exams and extra-class work.

In summary, the information gathered through various methods was contrasted by means of a methodological triangulation. In it, it was proved that in the subjects of the discipline there is a greater treatment towards the summative evaluation, characterized by the issuance of a judgment at the end of each teaching period, in which the role of the student is not enhanced to achieve the desired autonomy and independence.

Consequently, when assessing the students' criteria in relation to formative evaluation, the estimation of their performance in cognitive, procedural and attitudinal contents was made through a structured observation, which general results are shown in Figure 1,



which shows that regulation and feedback constitute the most difficult indicators in the procedural and attitudinal contents (Figure 1).



**Fig. 1.** - General observation results

The results obtained in cognitive performance were interesting, since none of them made a fair assessment of learning because they focused their interests on obtaining the maximum grade, aspects that are not determinant in formative evaluation. In the same way, the lack of evaluations and reflections that would serve as feedback for the teaching-learning process was noted, as well as the insufficient formulation of questions that would invite debate and reflection within the classes.

In the observation of the modes of action, from the procedural indicator, a better performance of the student was exhibited when solving simple tasks in the practical order that demanded, to a greater extent, a reproductive level of assimilation. On the other hand, it was demonstrated that sometimes they were able to solve more complex tasks, which lacked a higher level of application and creativity. It was revealed that they did not have the skills to self-regulate learning by their own management and group interaction.

In the attitudinal performance, it was evidenced that they almost always show respect and responsibility when issuing a value judgment on the learning of their classmates; but the critical analysis of the errors that would allow the regulation of how they learn and what should be improved to provide feedback to the teaching process was not taken into account.

The results obtained are oriented towards the reformulation of new objectives with the aim of transforming students' conceptions, modes of action and motivations towards formative evaluation. So that they learn to self-evaluate their performance and evaluate their peers to provide adequate feedback to the teaching-learning process.

Based on the indications for the design of "E" study plan, one of the challenges to overcome is to have relevant curricular designs that lay the foundations to promote a continuous increase in quality and effectiveness in the comprehensive training of professionals (Varona, 2020). The comparison of the results to determine criteria for the regulation and feedback actions of the teaching-learning process revealed strategic inadequacies for students to learn to self-regulate their own learning and co-evaluate their peers.





According to Hamodi, López and López (2015); Moreno (2018) consider that participating in co-evaluation processes through dialogue between peers is a stimulus to critical (self-) reflection and professional growth for expert and novice teachers. As observed, they generate a more open attitude towards peer observation and as observers they facilitate the analysis of teaching activity.

Studies carried out by Hernández and Parrales (2019); Mola, Sosa and Góngora (2020) show that teachers regularly accept their failures, that they question themselves and generate proposals to improve their own evaluative practice, where they indicate a change of mentality and a displacement of their conceptions towards formative evaluation.

Therefore, the transformations in the evaluation of learning and the achievement of a more qualitative and formative evaluation are premises for the teachers of the discipline Theory and Practice of Physical Education, so that they can improve their modes of action. Thus, it was demonstrated that the proposals, from the evaluation system of the programs of the subjects (projects of partial and final exams), were focused on a traditional evaluation.

In the student's performance, there were scarce abilities to make a fair evaluation of their learning, with disinterest and lack of motivation to give feedback to the teaching process, which shows scarce abilities for the construction of their knowledge, as well as the development of their attitudes and mastery of procedures for self-learning.

## CONCLUSIONS

The analysis of the theoretical and empirical inquiries applied in the research made possible the real and contextualized diagnosis of the characteristics of the teacher and students of the discipline Theory and Practice of Physical Education for the formative evaluation, identifying the main existing problems as insufficient knowledge system of the object in movement, in which facts, phenomena, concepts, magnitudes, laws, principles and theories are immersed; insufficient system of skills, which includes the relations of man with the object, through intellectual skills, methods and learning strategies, insufficient system of values that includes feelings, interests and modes of action.

The deficiencies found during the diagnosis carried out show that, in spite of the teachers' efforts to teach and develop evaluation skills in the students, it is necessary to increase the efforts to guarantee the quality in the formative process of the Physical Culture degree.

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**Conflict of interests:**

The authors declare not to have any interest conflicts.

**Authors' contribution:**

The authors have participated in the writing of the work and analysis of the documents.



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