

Translated from the original in spanish

Evaluation of impact in the sport specialties in postgraduate courses. Theoretical Fundamentals

Evaluación de impacto en las especialidades deportivas de posgrado. Fundamentos teóricos

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Received: April 29th, 2019.

Approved: September 2nd, 2019.

ABSTRACT

The present work deals with the theoretical referents to be considered for the evaluation of impact in postgraduate specialties, in the high performance sports of the Cuban sports system. The bibliographic study from the precursors to the present, deals with the conceptualization of evaluation, the evaluation of performance, and its relation with the evaluation of impact. The use of investigative methods of the empirical level such as the documentary analysis, the survey, the group interview and the criterion of experts, allowed to build a logical relationship to fulfill the proposed objective that consists on establishing the general theoretical positions for the impact evaluation. In postgraduate specialties programs for high performance sport in Cuba.

Keywords: impact evaluation; postgraduate specialty programs; sports system.

RESUMEN

El presente trabajo versa sobre los referentes teóricos a considerar para la evaluación de impacto en las especialidades de posgrado, en los deportes de alto rendimiento del sistema deportivo cubano. El estudio bibliográfico, desde los precursores hasta la actualidad, trata la conceptualización de evaluación, la evaluación de desempeño y su relación con la evaluación de impacto. La utilización de métodos investigativos del nivel empírico como son: el análisis documental, la encuesta, la entrevista grupal y el criterio de expertos, permitió construir una relación lógica para cumplir con el objetivo propuesto, que consiste en establecer las posiciones teóricas generales para la evaluación de impacto en los programas de especialidades de posgrado para el deporte de alto rendimiento en Cuba.

Palabras clave: evaluación de impacto; programas de especialidad de posgrado; sistema deportivo.

INTRODUCTION

Upgrading human resources is one of the main challenges for Higher Education in the 21st century. It must respond to the changes demanded by society, cannot be separated from the advances of science and technology, nor can it escape the global trends that arise from the great processes that determine the shaping of the current world panorama.

The scientific-technical advance in modern sport propitiates transformation at the international level, in the ways of conceiving the athlete's training and preparation, in the sports implements, in the procedures that lead to the periods and stages of training and the sports capacity to be achieved for each period or stage. In this sense, the preparation of the trainer occupies an important place within the changes and transformations that may arise in the sports sphere.

Consequently, the conduct of training requires the constant renewal of pedagogical methods and forms that promote actions relevant to the needs of contemporary sports practice. What has been analyzed above makes it possible for the Physical Culture professional to perfect and update his didactic and technical-tactical procedures for the adequate conduction of the training process, which must be accompanied by the latest scientific-technical progress in sports, with the objective of carrying out the athletes' sports training. (Martín and Trejo 2018).

Sports training, as a complex pedagogical process, requires a coach or sports teacher characterized by a consequent conduct in the face of self-improvement and love for his profession, endowed with knowledge, convictions and professional skills that allow him to successfully face the educational process and, in general, the social assignment assigned (Mesa, 2015).

In the current Cuban sports sector, it is necessary to know, through an evaluative process, the impact of the postgraduate specialty sports programs through an instrument that makes it possible to establish decision making related, among others, to the work done, to the improvement of the quality of the academic training programs and to the rational use of human resources. It is for this reason that, the present article intends, in a tight initial tour on the conceptualization of the terms evaluation, professional performance, to arrive at establishing the general theoretical positions for the evaluation of impact in the programs of postgraduate specialties for the sport of high performance in Cuba.

This conceptualization has its beginnings in the educational research carried out by Tyler, R. (1950), in the first years of the 1930s, when he carried out a logical historical study of the evaluation of educational programs and published a broad and renovating vision of the curriculum and evaluation. For fifteen years, he developed intuitions that came to shape the evaluative method as an alternative to other perspectives. Years later, this researcher summarizes, with his conceptions, that,

"(...) Evaluation is the process that has the objective of determining the extent to which previously established objectives have been achieved, which implies a value judgment on the information collected and which is issued when this information is contrasted with the criteria that are previously established objectives..." Tyler, (1950)

It was in the late 1950s and early 1960s that project and curriculum evaluations were already funded by federal agencies. This decision provoked a generalized campaign, where there is evidence of a critical movement carried out by several authors of the time, which allowed the development of new proposals that were mainly associated with the evaluation of processes and their results; their main exponents were: Añorga, (2001), Valcárcel, (2002) and Ferrer, (2002), cited in Mena, (2014). Years later, Dopico, (2007), defines evaluation as "The integral and systematic process oriented to the determination of the state, the operation and the projection of the evaluated object, in correspondence with the predetermined, normalized and desired, based on the flow, processing and feedback of useful information to the effects of generating new knowledge on the object to avoid and correct deviations, to guarantee its quality and its improvement".

According to Borges, (2014) another important moment, in the development and evolution of the concept, corresponds to Scriven, because this author adds to the evaluation the need to evaluate the evaluated object, that is to say, he integrates the validity and the method to decide if it is convenient to continue or not the educational program.

From now on, the manifestation of evaluation acquires greater dimensions, expressing itself in the evaluation of performance, referred to the performance of the professional in his work position.

For Serrano, (2001),

"professional performance, (...) is the ability of an individual to fulfill his or her functions, actions and roles in the pedagogical activity for the achievement of professional, institutional and social improvement, evidenced in his or her preparation for the transformation and production of new knowledge and values and full individual satisfaction in executing tasks with great attention, care, accuracy and speed.

Añorga, (2001) quoted in Mena, (2014), considers that,

"The process of evaluation of professional performance should not be limited to the evaluation of knowledge and skills, since, if one is educated in attitudes and values, it is because we expect modifications in the educational action of the professional".

Impact evaluation has been the object of multiple definitions in the literature referring to the problems of training and overcoming human resources. In this regard, Añorga, (2001) cited in Mena, (2014), defines it as "a process aimed at measuring the degree of transcendence of the evaluable object in the concrete socio-economic environment, in order to assess its effect on the applied objects and ensure the improved selection of new evaluation objects".

Another author argues that:

"...professional performance as the director's suitability to carry out the actions proper to his functions, where his political-ideological, technical-professional domain and leadership are reflected, allowing him to know how to be, according to the priorities of the work in the sector, according to the current demands and demonstrating it in the evaluation of the concrete results of his center...". Santiesteban, (2002).

Based on the theoretical systematization described above, this article assumes the representation of performance evaluation as follows: (Figure 1)

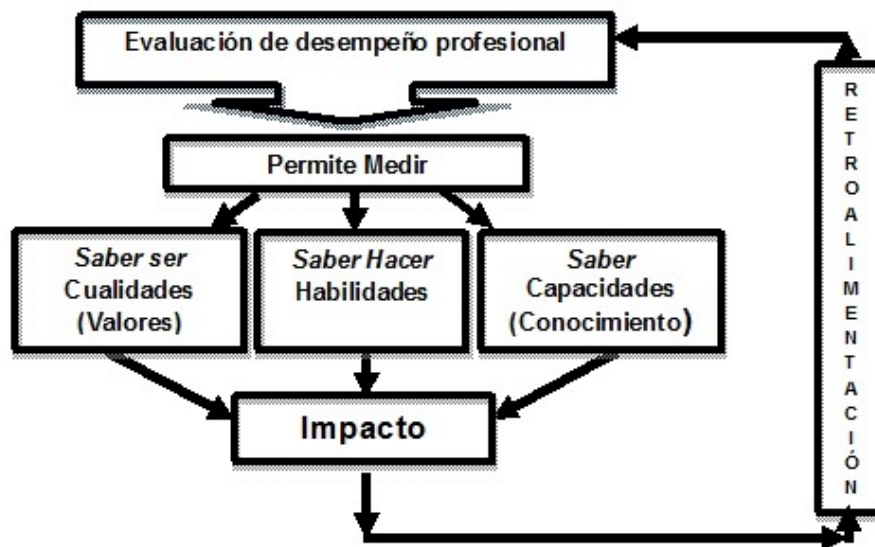


Fig. 1 - Evaluation of professional performance

Mena specifies, (2018), that the evaluation of professional performance allows to measure the qualities on the personality of the worker, what is translated to the conducts and behavior in his work post, the personal relations with his companions, the acquired abilities in reference to the scientific, technical, methodological and pedagogical work to carry out the process, the capacity of performance to fulfill efficiently the functions and obligations. In addition, it puts innovation into practice and demonstrates the suitability in the position it occupies, the efficient performance of competencies facilitates impact assessment and this in turn enables feedback, not only to the assessor, nor to the assessment as such, but for obtaining better results. Among the new proposals is the impact evaluation, which Addine (2007) refers to as follows,

"(...) Impact assessment is considered a particular case of quality assessment processes. It responds to its general logic; however, it essentially seeks to measure those variables associated with the impacts that are the object of attention in the evaluation, that is, those that show the achievement of the essential transformations proposed in the projected improvement..."

The relationship between impact assessment and quality assessment is evident in the previous proposal, although both are closely related to the content of this article, they place particular emphasis on the quality process. For this reason, once the systematization has been carried out, it is specified that Addine's definition is more related to the quality of the evaluation than to the impact evaluation.

Guerra, (2010), in his doctoral thesis on the impact evaluation of the training programme states that,

"The impact assessment seeks to establish what are the possible effects and consequences produced by the object to be assessed in a given population and not only the expected effects, in addition to considering those effects that derive from the implementation of the object to be evaluated."

For Barazal, (2011),

"To evaluate impact means to know what changes in professional performance take place that new manifestations are evidenced in being, doing and knowing how to do. Therefore, the true usefulness and relevance of this evaluation lies in the action it can take on the academic program in order to improve it.

In another order, the term impact, according to Sandoval, (2003), cited by Martínez, (2016), refers to "changes in the well-being of individuals that can be attributed to a program".

The evaluation of professional performance constitutes, in this publication, an important aspect due to the characteristics of postgraduate specialties. This evaluation is an instrument used to check the degree of compliance with the proposed objectives at the individual level and allows a systematic, objective and integral measurement of professional conduct and performance or the achievement of results.

Related to impact evaluation, there are different models, among which are: objectivists, subjectivists and critics, put into practice in the last century. At present, different authors have maintained these theories and have related them to the different educational environments, among which they are found:

The Añorga model (2004) focuses on postgraduate impact assessment; the following are considered components of the model: the purpose, the evaluation unit, the evaluator's role, the approach, and the methodological process. It is based on the theory of Advanced Education and assumes its main categories human improvement, professional improvement, labor improvement, and social pertinence.

In the model established by Ferrer (2002), the components and the system of variables, dimensions, indicators and instruments are determined to assess the impacts in terms of pedagogical-professional skills of primary teachers.

Rodríguez, (2010), from the proposal of a model for the evaluation of the pedagogical impact of educational software in the teaching-learning process of basic secondary school, intends to contribute to the improvement of the process, which must be

evaluated, not only from the point of view of the designers, technologists and pedagogues who conceived it, but from the analysis of how the subjects act and think that they should use it and appropriate the contents that this computer medium of teaching-learning carries, which would favor the improvement in the new proposals.

Finally, Barazal, (2011), in the model proposed for the evaluation of the impact of the master's degree in nursing on the professional performance of its graduates, develops different components among which are the academic, investigative, labor and extensionist, derived from the deficiencies detected in the analyses carried out, the current state of the process of evaluation of impact in the Faculty of Infant Education of the University of Pinar del Rio. To conclude, it tries to develop a model that puts in the hands of teachers and managers a system of concepts, methods and procedures that allow a coherent action of all involved.

Another important aspect worthy of analysis in this publication is the theoretical definition of variables, dimensions and indicators to measure impact in postgraduate specialties for high-performance sports, which takes into account the pedagogical, scientific and fundamentally professional character from the labor point of view of postgraduate specialties for high-performance sports, in correspondence with the labor functions, the skills declared in the programs, the performance evaluation indicators and the criteria of the academic committees.

For the operationalization of the variables, the criteria on the impact of postgraduate education are used, summarized in a set of doctoral theses: Moya, (2008), Metodología para la evaluación del impacto de las sedes universitarias municipales de la cultura física en la comunidad; Rodríguez, (2010), Modelo para la evaluación del impacto pedagógico del software educativo en el proceso de enseñanza-aprendizaje de la Secundaria Básica; Díaz, (2015), Metodología de evaluación de impacto de la maestría en educación médica sobre sus egresados. Likewise, Rodríguez (2017) was systematized as Methodology for the improvement of the process of evaluation of the impact of the methodological work in the teaching department of technical subjects of Technical and Professional Education.

In an analysis of the conceptualization of indicators and dimensions, Casau (2006), cited in Mena (2018), states that:

- a) An indicator is a manifest or observable property that is assumed to be empirically, though not necessarily causally, linked to a latent or unobservable property of interest.
- b) An indicator is the definition made in terms of empirical variables of the theoretical variables contained in a hypothesis.
- c) An indicator of a variable is another variable that translates the first to the empirical plane..."

As for the formulation of dimensions, Abreu (2012) states that:

"It depends on how the variable is conceptually defined from the outset. If, for example, in the definition of social class the importance of the economic level and the level of education has been underlined, these aspects can be taken as dimensions, that is, it is thought that the economic and the educational are important to understand which social class an individual belongs to...".

The same author declares that the indicators are the signals that allow identifying the characteristics or properties of the variables, being given with respect to a reference point. Within this framework, they are comparative signals with respect to contexts or to themselves.

Campistrous, (2006), cited Jova, (2014), raises on the determination of indicators that, as in all scientific activity, the first reference is to the study and theoretical analysis, from the deep theoretical knowledge of the object or phenomenon to be measured, is that it is possible to determine which are the characteristics that can best give information on its state.

Although theory is essential, it is not enough and it is necessary to use empirical procedures to determine the indicators. In this case, the empirical procedures to be used are related, in the first place, to the processing of expert opinion on the subject in question.

According to Díaz, (2015),

"in quantitative-qualitative research, the structure of variables, dimensions and indicators is very frequently used; the latter represent data obtained by inquiry and that can be measured and, in this way, express characteristics of a dimension that in turn reflects the properties of the object of study...".

Besides, he states: "This is why variables can be defined as characterizing the object of study and dimensions reflect those characteristics that are expressed through a set of indicators.

Based on the analysis of these definitions, operational principles are established for the determination of the dimensions and indicators to be measured, with the obtaining of empirical information about the influence of postgraduate specialties in high-performance sports.

MATERIALS AND METHODS

In relation to the sample used of a non-probability type and intentionally, three of a population of 29 postgraduate specialty programs in high-performance sports in Cuba were chosen from the first version, which were executed until 2012, when they were all officially closed by the then postgraduate vice-rectory of the University of Sciences of Physical Culture and Sport "Manuel Fajardo" and three of the 13, from the second version, which were submitted to the improvement process and approved by the MES (Ministry of Higher Education) for execution. The first three programs of version I corresponded to modern pentathlon, athletics and volleyball, and the second version of canoeing, boxing and synchronized swimming. For each of them, they were

involved, graduates, academic committee and faculty, as receiving users, employers and experts.

The sample of graduates is made up of 30 subjects, all with professional experience between eight and 17 years old and as a specialist between six and two years old; they passed through the base levels, Eide and Esfar; 100% linked to the professional exercise of high performance training, with participation in international sports events from Central American Games, Pan American Games, Olympic Games, World Sports and others.

The academic committee and faculty are made up of 15 members selected from the programs of the second version in canoeing, boxing and synchronized swimming; all of them with more than eight years in the role of coordinators or members, with vast experience in the direction of the specialty programs. They belong to the faculty of the programs of the chosen specialties of the second version. Their selection obeys, besides the accumulated experience, already declared, in the execution of their respective programs, to have achieved total efficiency, to the holder the registration in the time of execution of their programs; to have academic committees and stable cloisters, which evidences a dose of proven responsibility in the development of this organizational form of academic formation.

A sample of 28 employers took part in the research process. In their various functions as managers, they are in a favorable position vis-à-vis the professional graduates (specialists) of the programs selected to provide opinions regarding their professional performance. A sample of 19 experts was used. Their participation consisted of the determination of dimensions and indicators and their weighting. All with 15 years of professional experience and exercising different functions; 17 of them, with the principal category of tenured teacher and assistant. Two of them serve as specialty coordinators. All 19 have participated in external evaluation processes and belong to different work centres, related to the practice of high-performance sport.

For this study, the bibliographic review of the theoretical references related to the subject was carried out, in addition, the analysis of documents that allowed, through an elaborated guide, the study of different documents among which they are: the programs of postgraduate sports specialties, the self-evaluation and pilot evaluation reports, carried out by the JAN expert commission, several specialty programs for high-performance sports, resolution 132/04, the Higher Education Regulations, the Norms and Procedures for Postgraduate Management and the System of Evaluation and Accreditation of Specialties (SEA-EP). Also analyzed was Resolution 4/2012 which deals with the methodology for the evaluation of the results of the work of the technical staff of the teaching, established by the central body Inder, which states the evaluation models and indicators to evaluate the performance of coaches.

All this analysis was done with the objective of specifying the existence or not of how the impact of postgraduate specialty programs in general was evaluated and, specifically, the performance of high-performance sports coaches.

Surveys were applied: first to the coaches who graduated as specialists, with the objective of knowing if there were other unobserved functions that they perform on a daily basis because they are necessary for the integral development of the athlete. They were applied in the first semester of 2016, in the competitive scenarios of the

selected sports, corresponding to the national school games, youth games and first category.

In a second moment, it was applied to the coordinators of the academic committees of the specialty and members of the faculty of the programs selected in the sample, considered users of the specialty programs, with the objective of verifying the current state of the evaluation of the impact of the programs of postgraduate specialties in high-performance sports and, in a third moment, it was applied to employers of the graduates, with the objective of knowing the contribution of the specialties in relation to the variables determined for the evaluation of their impact and the changes that occurred in the graduates, after obtaining the knowledge from the curriculum and its materialization in the workplace.

The accomplishment of group interview also contributed to the obtaining of information in a space of exchange and with the active participation of the graduates as specialists, with the objective of knowing the criteria about the influence of the specialty in their professional formation, personnel and suggestions for the improvement of this form of organizational postgraduate.

In order to increase objectivity in the analysis of the data obtained from the impact assessment, methodological triangulation was used, which allowed the interweaving of the information collected through documentary analysis, the survey of beneficiary users. In order to determine and validate the dimensions and indicators that would make up the methodology, the criterion method of experts was used and the methodology chosen was that of Delphy, as this method had to be used for two purposes through rounds. In the first round, the experts were used to obtain a proposal of indicators located in different dimensions according to their nature; in the second round, they were used to weight the dimensions where the proposed indicators were located.

RESULTS AND DISCUSSION

In the definitions analyzed, there are common elements that characterize in their content the impact evaluation and that are necessary to establish the process of evaluation of impact of the postgraduate specialties in the Cuban sports system, as they are:

- Evaluate its effect, ensure its refinement and determine new evaluation objects.
- Change induced by a project sustained over time.
- Cause-effect relationship.
- The measurement of variables.

As can be seen, the definitions studied consider impact as transformations, changes produced by an intentional action, for example: the environment, programs, projects or a specific population group.

Bearing in mind the above approaches for a definition of impact assessment, according to criteria of Addine, Guerra, Barazal, the forerunners of this article, which

are assumed by the authors of this article, should consider the following fundamental ideas:

- It constitutes a continuous process aimed at evaluating not only the results, but also the quality of the actions implemented.
- It must be able to assess whether or not (i.e. where there were no impacts) the expected changes and the relevance of the changes produced.
- It must offer the certainty that the changes observed are the result of the actions whose impact is evaluated.
- It should provide information on which segments of the object evaluated were most strongly influenced by the actions implemented, and to what extent and what contribution its various components made to quality improvement.
- It should allow information to be obtained on changes not initially foreseen.

Impact assessment is, therefore, a process aimed at judging the value of changes produced in a given object by the implementation of certain actions, the magnitude they had, what aspects were affected and the extent to which these changes contribute to the continuous improvement of the object assessed.

In order to measure the impact of postgraduate specialities in high-performance sports, the five levels of impact assessment prepared by Rodríguez are established in his model, which identifies the improvement of the indicators through different ranges of percentages established according to the level and are determined in the following way:

- Level 1. very high impact: expresses positive changes between 81 and 100 % of the indicators. The transformations that have occurred can be observed with the naked eye.
- Level 2. high impact: expresses positive changes between 61 and 80 % of sub-indicators.
- Level 3. medium impact. expresses positive changes between 41 and 60 % of the sub-indicators:
- Level 4. low impact. Expresses positive changes between 21 and 40 % of sub-indicators. Not always willing to change.
- Level 5. Very low impact. Expresses positive changes between 1 and 20 % of sub-indicators. Remains without noticeable impact effects.

According to the analyses made to the different models of impact evaluation and considering each one of the characteristics presented in them, the author of this research establishes the following as main characteristics for the impact evaluation of postgraduate specialty programs for high-performance sports:

- Specify goals, objectives, and skills stated in the program.
- Description of the users, population and sample of the evaluation object.
- Verify the existence or not of prior norms/criteria for the evaluation.
- The evaluator must make a diagnosis of the personal, institutional and context conditions in which the program is applied.
- The flexibility of the evaluation content.

- Selecting or developing appropriate instruments to measure programme situations or conditions.
- Collect the necessary information, using the measuring instruments of the previous point on whether or not the objectives have been achieved.
- The information related to the transactions is of a procedural nature. This includes interactions between the recipients of the programme and other people most closely related to the programme (employers, users, graduates).
- Identify the effects of the program, including negative ones, through research instruments. Identify the effects of the program, including negative ones, through research instruments.
- Consider innovation and change as important aspects to assess impact.
- Carry out a comparative analysis of what has been achieved, deducing it from the information gathered and what was to be achieved (previously established objectives/goals).
- The results refer to the achievements made through the programme. This information includes attitudes generated, capacities developed and aspirations of the participants.
- Regarding professional performance, the aspects that identify it are related to the main characteristics that define the postgraduate specialties, cited in the resolution (132/04), where it is stated that: it provides the updating, improvement and expansion of labor competencies for the professional performance that the job requires.
- It is based on the professional activity required by a given job position, where specific professional competencies are acquired or perfected for optimal performance.
- The profile of the graduate is proposed based on the labor competencies that must be attained by them at the end of the training.

As a result of the documentary study carried out and the background of the subject in question, taking into account the integrity of the specialist trainer, three dimensions are determined with their indicators, which allow the influence of the postgraduate specialty on high-performance sports to be measured, in order to subsequently assess the impacts of this training on the Cuban sports system.

Dimension #1. Professional Performance

It allows to measure the abilities of the graduate, that demonstrate the degree of development reached after concluding the specialty and its contribution to the process of sport training. For this dimension, a group of general skills that the high-performance sports coach must possess was defined, where the work scenarios are the training centers and the demand as professionals is centered on making use of all the knowledge, which is manifested in their daily work, innovation, and all the necessary tools so that the athletes can achieve the best possible results.

The influence of these skills can be measured through the mastery expressed by the components of the teaching-learning process of sports training, knowledge of current trends in sports training, preparation they have to lead the collective of coaches, carrying out actions to develop psychopedagogical work with their athletes, preparation to develop the educational work and strengthening of values in their athletes, development of the process of sports training in internationalist missions, quality of the methodological preparation it imparts, knowledge of the guiding

documents of the methodological work. In addition, to be responsible for the technical-methodological collective of his sport, member of the academic committee of the specialty, to execute undergraduate teaching activities, to execute teaching activities of other forms of postgraduate and to participate in the elaboration of the plan of integral preparation of the sportsman of his sport.

Dimension #2. Research Labor Performance

It allows measuring the work of the trainer in terms of investigative skills, stimulated by the processes of search, transformation of the sport training as a process to be able to give solution to the scientific problems that derive from it, to demonstrate the degree of development reached and the scientific skills acquired in the course of the specialty.

The mastery of these can be measured through their participation in research activities, application of science in their daily work, author of research projects, co-author of research projects, conduct thesis tutorials, member of the board of scientific events, presentation of scientific results, scientific-sports exchange, publication in journals, CD-ROOM, develop materials and media for the development of sports training, participate in events and obtaining scientific category.

Dimension #3. Personal Development

It allows to measure those own aspects that produce changes in the personality of the graduate and favor the development of the human qualities, elevating its level in the Cuban sports system. These abilities can be measured through the elaboration of the individual development plan with superior aspirations, the performance as a management team at different levels, the transit through teaching categories, the elevation of the quality of the performance evaluations through their personal relationships, where they demonstrate the values that characterize them, such as independence, flexibility, collaboration, personal satisfaction, honesty, motivation, work discipline, teamwork, sense of belonging, creativity, responsibility and humanism.

This research concludes by stating that the analysis of the theoretical foundations that sustain the evaluation process revealed the relationship that exists between the different types of evaluation and their actions in postgraduate academic training.

It is evidenced that the evaluation of professional performance has very necessary characteristics to carry out the evaluation of impact of the programs of postgraduate sport specialty, given the own particularities of this organizational form of overcoming.

Three dimensions with their indicators are determined, taking into consideration the characteristics of the integrality that a high-performance sports coach should have and the criteria of the different authors consulted.

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