

The interdisciplinary relationship between informatics and professional training in the Physical Culture career
La relación interdisciplinaria entre la informática y la formación profesional en la carrera Cultura Física

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Reception date: June 14, 2023

Acceptance date: July 16, 2023

ABSTRACT

This research is a new way of conceiving Higher Education; with the objective of developing a Website that contributes to the interdisciplinarity of informatics with the subjects of professional training of the Physical Culture specialty of the Municipal University Center of San Antonio del Sur, Guantánamo, Cuba. The methods of the theoretical level were used: historical - logical, analytical - synthetic and inductive - deductive. The systemic approach allowed to address the updating process and its relationship, both structural and functional. The proposal was put into practice and its benefits for the teaching-learning process of the center were confirmed.

Keywords

Interdisciplinarity; Vocational training; Systemic approach; Teaching-learning process.

RESUMEN

Esta investigación es una nueva forma de concebir la Educación Superior; con el objetivo de elaborar un Sitio Web que contribuya a la interdisciplinariedad de la informática con las asignaturas de formación profesional de la especialidad Cultura Física del Centro Universitario Municipal de San Antonio del Sur, Guantánamo, Cuba. Se emplearon los métodos del nivel teórico: histórico – lógico, el analítico – sintético y el inductivo – deductivo. El enfoque sistémico, permitió abordar el proceso de actualización y su relación tanto estructural como funcional. La propuesta fue puesta en práctica y se constataron sus beneficios para el proceso de enseñanza– aprendizaje del centro.

Palabras clave

Interdisciplinariedad; Formación profesional; Enfoque sistémico; Proceso de enseñanza – aprendizaje.

INTRODUCTION

The profound changes that have occurred in all areas of society in recent years require continuous training throughout them for teachers and for all citizens in the use of Information and Communication Technologies.

The challenge facing the teacher at this time depends to a large extent on his ability to assume the new educational paradigms and the mastery he has of the use of technologies in his professional activity. It is no longer just about knowing a lot but about finding the connection between knowledge, through the history of education, much has been said about interdisciplinarity. The purpose of centralizing the main questions and projections around integration attempts is not a coincidence and is especially valid.

In relation to what has been stated, Fiallo (2018) affirms that "the formative development immersed in an interdisciplinary thought, where it does not see the phenomena from a point of view of a certain science, but rather sees them as they manifest in nature, multifaceted, interdisciplinary and holistic" (p.56).

The authors of this work consider that the interdisciplinary process in teaching promotes the integral formation of the professional, a goal followed by the teachers of the level of education in which this research is carried out.

The theme is fully valid today and is recurring in international forums and specialized magazines. Proposals from different points of view abound, although the fundamental problem centers around how to integrate knowledge and what knowledge to integrate.

Interdisciplinarity is based on the very systematic nature of the work of the human brain and its psychic functions. Objective reality is a harmonious whole and the human brain reflects it as such.

In this sense, Rodríguez (2019) defines it as "sensations, perceptions and affections endowed with a clear, separate and differentiated unity are the essential conditions of any experience". (p.11)

When in the third educational revolution in Cuba, the university campuses were created, which were equipped with the technical requirements for the correct functioning of the municipalization of Higher Education, giving the possibility for the community to integrate into university education, it was also sought a graduate with comprehensive training, which is not possible without interdisciplinarity.

Currently, the San Antonio del Sur Municipal University Center in the Guantánamo province has 16 machines, in addition to two computer science professors who in turn master the fundamental elements of the Physical Culture specialty that is studied at the center. and it has 17 teachers who are prepared to face the use of informatics as a useful science for learning the specialty, but it does not have a specific informatics product that allows interdisciplinarity between informatics and professional training

subjects, which that brought with it insufficiencies in the learning of these subjects, until the moment in which the present investigation is developed, this interdisciplinarity has been forced in the course of the teaching-learning process.

That is why the research problem is: How to contribute to interdisciplinarity between informatics and specific professional training subjects in the Physical Culture specialty from the first year at the San Antonio del Sur Municipal University Center? For what is proposed as an objective: Develop a Website that contributes to the interdisciplinarity of computing with the subjects of specific professional training in the Physical Culture specialty of the Municipal University Center of San Antonio del Sur.

METHODS

To verify the reality in the center, there is a population of 35 first-year students of the speciality and 5 teachers, who are in charge of working on 100% of the specific professional training subjects of the specialty in the year. For the investigation, the research instruments were applied to 21 first-year students of the specialty, which represents 60% of the student population. The sampling was carried out intentionally since 2 authors work with the teaching group and also 5 teachers who work with the year are selected, which represents 100% of the population.

The dialectical-materialist method of research is assumed as a general method, based on a Marxist-Leninist philosophical approach. Its laws, principles and categories were taken into account to raise its scientific level, in turn it offers its methodological value since it allows the study of the phenomenon in its development, by using methods that recognize the essence of the problem of an integral nature.

The combination of the theoretical level methods allowed the elaboration of the proposal and the report, of which the historical - logical were combined when studying the historicity of interdisciplinarity as an element of the teaching-learning process, the analytical - synthetic important for the process of research making it possible to formulate conclusive situations and establish relationships and general characteristics between the elements of reality, the inductive - deductive facilitated the location of the most common problems that hinder the development of interdisciplinarity and arrive at the conclusions, with the approach it was possible to address the updating process, from its systemic totality and in the interaction between its components, by expressing their structural as well as functional relationship, can be seen in the final result of the research and modeling.

The latter was a very valuable tool for the preparation of the Website that is presented as a scientific result of the investigation, as a theoretical method, it is justified in this type of work by the fact that the Website that is reached, as the main result of investigative actions.

The empirical methods used in this research allowed us to know the reality of the problem in the center under study, plus the impact of the proposed solution. Among them were used: the review of documents, with the purpose of knowing the regulations and links established for the Physical Culture specialty regarding the use of information technology, the observation of classes to verify if in the subjects of professional training of the In the Physical Culture specialty, interdisciplinarity with computer science is established, in the initial and final stages to verify the results of the implementation of the Website, the student survey with the aim of knowing the level of interdisciplinary relationship between computer science and the vocational training subjects and the interview with teachers, to determine the degree of preparation that teachers present to guide the work with computer science in the classes they teach, the latter was very important for the completion and enrichment of the results in the stage diagnostic.

RESULTS

For the investigation, the authors determined that the efficiency indicators that most show the result of the implementation of the proposed Website are:

Learning, defined as: acquisition of a new behavior in an individual as a result of their interaction with the external environment.

Promotion, which is defined as: Elevation or improvement of reproductive or intellectual conditions.

Quality of learning that is understood by the ranges in which the grades of an exam are broken down into points where 2 points will be the lower range of passing and 5 points the upper limit.

Document Review.

Regarding the review that the authors carried out of the study plans of the specialty and the programs of the subjects that make up the discipline that is taxed to the specialty, it was possible to verify that the students receive four specific professional training subjects during the first year. and computation reaching the conclusion that the first year of the specialty is the year with the greatest potential to establish an efficient interdisciplinarity and diagnose the domain of the definitions that in the field of Physical Culture acquire, it is of vital importance for the achievement of the discipline guiding skills for the year.

Observation of classes of specific vocational training subjects.

In the initial stage, a total of 33 classes distributed among the subjects of the year were observed, the distribution was made based on the potential offered by the subjects, obtaining the following regularities.

- There is little evidence of interdisciplinarity in the classes of specific professional training subjects in the first year of the degree, which affects learning and its quality.
- The interdisciplinary relationships that are established are repetitive and generally orally.
- student survey

From the survey applied to 21 first-year students of the Degree in Physical Culture, it was found that:

- Students do not systematically perceive interdisciplinarity with computing
- They consider the interdisciplinarity used only for the search of concepts to be repetitive.
- The learning of the students in the subjects specific professional training in Physical Culture is generally in the order of 2 or 3 points.

Interview for teachers.

A total of 5 teachers were interviewed, representing 100% of the population and from this the following results were derived:

- Teachers know the importance of establishing interdisciplinarity with computing in their classes.
- It does not develop interdisciplinarity with computer science in classes, mainly because it does not have educational software for the specialty.
- Learning in specific vocational training subjects is situated in the initial stage in the order of 3 points, so it can be said that the quality of learning is regular.

By way of conclusion, it is stated that the instruments applied in the investigation in the diagnostic-investigative stage yielded results that prove the deficiencies that gave rise to the present investigation, in addition they demonstrated that the real problem does not lie in the preparation of teachers but in the Lack of a computer product that allows it for the specialty.

DISCUSION

There have been many works carried out in terms of interdisciplinarity, among scholars of the subject there are many criteria around conceptualization, ranging from less relevant elements due to their incidence, such as the spelling of the term to decisions related to its dimensions. epistemological and theoretical - methodological.

In order to define or explain what interdisciplinarity consists of, Saneugenio (2016) affirms that "it is not learned or taught, it is lived. It is fundamentally an attitude of the spirit, a mixture of curiosity and openness, a sense of adventure and discovery" (pp.42-43)

Especially in the Physical Culture specialty, it is essential to introduce changes in the modes of action of teachers and students, given the significant contemporary challenges of science and technology. For

this reason, it is absolutely necessary to undertake in the Physical Culture career the training of professionals who can face all the rigors and requirements that development demands, in direct link with the advances of the new technologies available today.

That is why the authors consider that the use of information technology as a teaching medium is a catalyst for the curiosity of the students, which develops in them the motivation for a certain activity and of course linked to the occupational profile with which they interact.

All scholars of the subject agree that more than a theoretical analysis, which this study approaches, what it is about is specifying interdisciplinarity in an educational practice, that is, how to develop an interdisciplinary action that promotes the fulfillment of the objectives formative. Defining the teaching-learning process has been the task of many scholars. One of them, Bermúdez (2004) concludes that "it is the interaction between the teacher and the students through which the teacher directs the learning through an adequate activity and communication that facilitate the appropriation of the historical - social and the growth of the students and the group, in a process of personal construction. and collective" (p.89)

Precisely this study developed by the authors, unlike other works, gives it great importance when conceiving the terms zone of current development and zone of proximal development, to argue the necessary psychological bases for all those who will become users of their research results.

Starting from the fact that the theoretical assumptions that support the present investigation are based on the dialectic - materialist and constitute a starting point to contribute to the interdisciplinarity of computer science with the subjects of specific professional training.

The foregoing supports the psychological character that the authors give to their proposal by trying to get students to internalize, through a construction process with others, the objective reality that is the object of teaching, which constitutes, in this case, the external of cultural significance.

Other works adopt the multimedia modalities used to display the teacher's work, (The tutorials, the reviewer and the electronic book), since up to now it has not been conceived to replace the teacher, but in this case the proposal has been elaborated in order to reinforce the latter's work in terms of concepts and interdisciplinary relationships in the specialty, due to this position the Web site includes some aspects of the classification that Ribero offers in this regard. (1999) This author establishes said classification as follows:

- Active teaching means. Included as active teaching means are all those means designed to try to replace the teacher and direct the teaching-educational process, based on a markedly self-taught character, through tutorials, coaches, reviewers and evaluators.

- Passive teaching means. They are those means that are developed to be used in a teaching activity conducted by the teacher, not pretending to replace him. They are similar in this purpose to traditional teaching media, including in this case electronic books and simulators.
- Indirect action teaching means. They are those means that the student uses without the conscious purpose of learning, but that due to their characteristics subtly exert their didactic action. In this group are the so-called instructive games.

This proposal tries to establish a relationship between all the classifications since, according to the authors' criteria, the Site can be used didactically, it also provides a great flow of information such as electronic books and can develop self-learning in students, motivating them to use it. on their own, that is to say, without the precise guidance of a teacher.

The proposed Website contains up-to-date information and precise guidelines for the subjects of the specialty in order to contribute to the success of the interdisciplinarity of computer science with the classes of specific professional training subjects in the first year of the Physical Culture career of the Center Municipal University of San Antonio del Sur.

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