



Interdisciplinarity in the training of medical students

La interdisciplinaria en la formación de los estudiantes de la carrera de Medicina

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ABSTRACT

The defense of interdisciplinarity has an increasing significance in educational dynamics, where several disciplines share an object of study, as well as approach or research methodologies, managing to communicate and

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coordinate in a field of knowledge. In addition, the emergence of interdisciplinary research teams is observed in institutes, centers and foundations where several fields of knowledge and research converge, to understand and solve complex problems. Interdisciplinarity constitutes the process of "enrichment" of the curriculum and learning of its actors that is achieved as a result of recognizing and developing the existing links between the different disciplines of a study plan through the components of the didactic systems of each of them. The relationships in the training of general physicians of the interdisciplinary nodes were reflected upon, due to their contribution to the comprehensive training of the graduate. Plan E has curricular adjustments and proposes improvements for the teaching-learning process that are proportional to the requirements of the health system and scientific development in the 21st century. In the training of the future Cuban medical professional, attention is paid to the process of interdisciplinarity in the various training disciplines that are conceived within the curricular design of the career, through lines or strategies that allow the incorporation of skills and new knowledge to the future professional.

Keywords: Medical Education; Students; Interdisciplinarity; Medicine; Teaching-learning process; Health

RESUMEN

La defensa de la interdisciplinariaidad tiene una significación cada vez mayor en las dinámicas educativas, donde varias disciplinas comparten un objeto de estudio, así como metodologías de abordaje o de investigación, logrando comunicarse y coordinarse en un ámbito de conocimiento. Además, se observa el surgimiento de equipos de investigación interdisciplinarios en institutos, centros y fundaciones en los que confluyen varios campos de conocimiento y de investigación, para comprender y solucionar problemas complejos. La interdisciplinariaidad constituye el proceso de "enriquecimiento" del currículo y aprendizaje de sus actores que se alcanza como resultado de reconocer y desarrollar los nexos existentes entre las diferentes disciplinas de un plan de estudio por medio de los componentes de los sistemas didácticos de cada una de ellas. Se reflexionó sobre las relaciones en la formación del médico general de los nodos interdisciplinarios, por su contribución a la formación integral del egresado. El plan E cuenta con ajustes curriculares y propone mejoras para el proceso de enseñanza-aprendizaje que son proporcionales a los requerimientos del sistema de salud y al desarrollo científico en el siglo XXI. En la formación del futuro profesional de la medicina cubana se presta atención al proceso de interdisciplinariaidad en las diversas

disciplinas formativas que se conciben dentro del diseño curricular de la carrera, mediante líneas o estrategias que permitan la incorporación de habilidades y nuevos conocimientos al futuro profesional.

Palabras clave: Educación Médica; Estudiantes; Interdisciplinarietàad; Medicina; Proceso de enseñanza-aprendizaje; Salud

Cuban Higher Education is committed to maintaining its model of a modern, humanistic, universalized, scientific, technological and innovative university, integrated into society and committed to building a prosperous and sustainable socialism. A university characterized by the formation of values and the assurance of the quality of its substantive processes in order to achieve a graduate who possesses qualities, general culture and professional skills that allow him to perform with social responsibility. ⁽¹⁾

In recent decades, the interdisciplinary impact has had an increasing significance in educational dynamics and there are frequently more examples in which several scientific disciplines share objects of study, intervention approaches or research methodologies, which manage communication and coordination within a field of knowledge. The emergence of clearly interdisciplinary research teams is frequently seen, manifested in institutions, centres and foundations where different fields of knowledge and research come together to understand and solve complex problems. ⁽²⁾

Interdisciplinarity is the significant process of "enrichment" of the curriculum and learning of its actors that is achieved as a result of recognizing and developing the existing links between the different disciplines of a study plan through all the components of the didactic systems of each of them. ⁽³⁾

The interaction between the disciplines that make up the curriculum of the courses is currently a necessity in the teaching-learning process. A high level of novelty in interdisciplinary relationships is required as a methodological support in the solution of professional problems.

Interdisciplinarity is a necessity in these times at the different levels of education. In Higher Medical Education it is expressed as a ministerial regulation, a pedagogical and didactic principle with the aim of making teaching more attractive. The interdisciplinary link in the teaching panorama is contained in the scientific effort to find solutions to what is considered a philosophical contradiction between the current state of reality and the need

to understand that reality in the thinking of the adolescent and young person to whom the classes are directed.

Higher medical education needs to increase the quality of the pedagogical training of the teaching staff based on the integration of knowledge, which is embodied in the functions of the University oriented to the academic, professional and research training of its human resources. This requires that the teaching team be able, based on the curriculum, to connect its object of study with that of other disciplines that address similar topics but with different approaches, depth and methods. Consequently, an original, common and multidisciplinary approach can be achieved that is valuable for subsequent professional practices; ⁽⁴⁾ for which reason the research aims to analyze the behavior of interdisciplinarity in the training of students of the Medicine career.

Interdisciplinary work has been variously referred to as interdisciplinarity or interdisciplinary approach. The topic of interdisciplinarity is controversial in relation to the perspectives from which it is analyzed by different authors. This variety of criteria is what makes it sometimes difficult to implement in different educational settings.

Interdisciplinarity, as a way of conceiving knowledge today, is an alternative to coherently relate both scientific disciplines and subjects in curricula. It is required due to the need for a comprehensive approach to reality and specifically to the problems related to the professionalization of content in the context of today's university. ⁽⁵⁾

Interdisciplinarity, seen as the set of relationships established between related disciplines with the purpose of overcoming isolated, dispersed and fragmented ways of understanding and transforming reality, constitutes a topic of pedagogical interest addressed in foreign and national literature.

In the bibliographic review carried out, contributions of unquestionable scientific value are appreciated: they substantiate epistemological aspects, discover essential relationships between disciplines, declare general paths and procedures for methodological work in certain careers reveal integrative nodes in curricular designs, conceive strategies and promote levels of disciplinary integration in research activity. However, it is striking that most of these investigations do not focus on interdisciplinarity as a theoretical-methodological problem of postgraduate studies, but rather deal from an interdisciplinary projection with the solution of certain problems linked to that educational level.

Interdisciplinarity is a process with a systemic approach, since it is encouraged and gradually perfected during the practical activity itself. It is the relationship of the content where there are knowledge, skills and values with a determined competence from a particular discipline to assume the necessary, distinctive and differentiating relationships with others of a specific problem for educational purposes and professional training that produces methodological processes for its development, attending to all the components of the educational teaching process: objectives, contents, methods, means and evaluation in a coordinated and integral way, in such a way that there is flexibility before the curricula. ⁽⁶⁾

In general, interdisciplinary relationships are based on basic ideas related to the qualities of their development (process, strategy, path, interactions) or to ways of implementing them (through the organization of content, methods, procedures and skills, mainly).

Interdisciplinarity shows the links between different disciplines and reflects an accurate scientific conception of the world that demonstrates how phenomena do not exist separately by interconnecting them. Through content, it outlines the interaction and dependence of the development of the world by means of cooperation between various disciplines and mutual interactions of cognitive enrichment.

In the opinion of the authors, the most significant thing is that some focus these definitions on the development of skills, procedures or abilities in order to achieve the integration of disciplines. Therefore, it is in the hands of teachers that the university becomes the main center for the contribution of knowledge and problem solving. ⁽⁷⁾

Interdisciplinarity is one of the guiding principles for the design and development of study plans, with the aim of forming the citizen that today's society demands. It requires conviction and a spirit of collaboration among teachers, since it is not a theoretical issue, but a practical one. It is necessary for the organization of the teaching-learning process and the creation of more explanatory models with the development perspective that is required.

In order to achieve some of the objectives declared in the professional model, the contents and skills are organized logically and didactically, in the form of a system that serves as a basis for assimilating them and that is partially or totally linked to one or several branches of human knowledge. ⁽⁸⁾

In studies on these relationships in the training of general physicians, interdisciplinary nodes are useful for their contribution to the comprehensive training of graduates. In health institutions, human talent is an essential resource, so its proper management is crucial for the optimal performance and achievement of the goals of such entities, as well as of the health system as a whole. In this context, to offer quality health services, academic preparation is not enough; it is also necessary that knowledge is used appropriately, based on solidly formed values, with interdisciplinarity as a fundamental tool from the pedagogical practice of the professor. ⁽⁹⁾

It is agreed that interdisciplinarity during the teaching-learning process in Medical Sciences is realized in the articulation of knowledge from different scientific, scientific and technological disciplines in the identification and construction, in addition to the understanding and/or resolution of health problems. ⁽¹⁰⁾

A review of the literature revealed that, although there is international theoretical recognition of the importance of relationships between undergraduate subjects, this is not put into practice in all countries. In the medical field, the establishment of interdisciplinary relationships constitutes a challenge to the relevance and quality of work in teaching groups. ⁽¹¹⁾

According to the authors, interdisciplinarity is recognized as the principle that favors a significant process of vocational enrichment from their pedagogical practice, to the development of their individual identity and consequently to social identity in a more human and supportive sense. Consequently, a school with a developmental sense will not only promote know-how, but also the knowledge of love for a more human world.

One of the great challenges of Higher Medical Education in Cuba is to graduate professionals capable of comprehensively solving the complex problems they will face in their professional performance. Among the strategies adopted to achieve this challenge is the development of interdisciplinarity, through the teaching-learning process, to contribute to the development of a general and comprehensive culture and a scientific conception of the world. ⁽¹²⁾

The Medicine degree is a microsystem made up of a platform of subsystems that, as a whole, aim to produce a professional who responds to the health demands of the society (macrosystem) in which it is inserted. This degree presents a dialectical structure that starts from a gradual derivation of objectives, moving from the general to the particular. The main integrative discipline (DPI) is structured under the logic of science and the research-based



work component, influencing the other curricular units. The rest of the disciplines must analyze and explore content that acts as interdisciplinary nodes. ⁽¹³⁾

Considering that education at work is the form of organization of teaching, it is convenient to start from a problem of work activity and resort to knowledge of different subjects that allow to build partial or final solutions to the problem in question. ⁽¹⁴⁾

Interdisciplinarity gives structure to the curriculum by integrating disciplinary content; it also mobilizes the training process towards the solution of complex problems of the profession. It also plays a fundamental role in the transmission of scientific knowledge and facilitates learning, assimilation and integration of knowledge. ⁽¹⁵⁾

In the opinion of the authors, the training of general physicians in Cuba has maintained a progressive improvement through the different curricula of the Medicine career implemented. Currently, there is plan E, where curricular adjustments were made depending on the requirements of the health system, improving the teaching-learning process in proportion to the scientific development of the present 21st century.

In this plan, attention is paid to the process of interdisciplinarity in the various training disciplines that are conceived in the curricular design of the career through lines or strategies that allow the incorporation of skills and new knowledge to the future professional.

It is believed that interdisciplinarity is a key factor in the training of future doctors to face the various challenges that they will face in their daily practice. Interdisciplinary work is not a recipe, nor a directive. It is a process that is encouraged and gradually perfected during the practical activity itself. The Medicine degree, from the structure of its curriculum, assumes a disciplinary path for the establishment of links in terms of the methodological and practical plane. It is necessary to move from multidisciplinary to interdisciplinarity as a need for development in our universities and a comprehensive training of students.

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RMSD: conceptualization, investigation, methodology, validation, writing of the original draft, review.

LTEA: conceptualization, investigation, methodology, validation, writing of the original draft, review.

CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

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