

Didactic systematization for the approach to the construction of the knowledge society in Cuba

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ABSTRACT

In Cuba there are foundations that demonstrate the construction of the knowledge society as a phenomenon of social reality, which can be recontextualized, although it has been little systematized. The objective of this work is to carry out a didactic theoretical systematization of the construction of the knowledge society in Cuba in the subject of Social Studies in Science, Technology and Society. Methods such as historical-logical analysis, hermeneutics, class observation and interviews were used. The methodological work carried out achieved a better understanding of this phenomenon in order to transform society by strengthening social responsibility.

Keywords: Systematization; Didactics; Social process; Knowledge society; Methodological work

Introduction

The growing transformation of contemporary science and knowledge as a result of scientific and technological development is accompanied by restructurings in human history and societies, which requires inter, multi- and transdisciplinary efforts to analyze phenomena and processes.

A comprehensive approach to what should be understood as knowledge society will require bringing together various views and perspectives of interpretation of this phenomenon. In the 20th century, the term knowledge society began to be used massively at the same time that other concepts such as “learning societies”, “education for all” and “lifelong learning” were emerging. This reflects the need for change to a new culture that is just emerging.

In Cuban society in recent years, given the impulse and priority given by the Cuban government to science and innovation, it is a practical necessity for society to perceive even more in the generation of knowledge its central value for solving the problems of Cuban society and its sustainable development.

Hence the need and relevance of the knowledge society in different social spaces, to clarify the role and place of theory, to prepare the current Cuban society to achieve optimal performance in the society in which the new generations must move for the performance of excellence to which it is called.

The work developed in the discipline of Marxism-Leninism, seen through the validation of the program of the subject Social Studies in Science, Technology and Society and the actions that are developed in different organs of the methodological and educational teaching work in the career of Agricultural Engineering of the University of Guantanamo evidences insufficiencies in the teaching and learning process regarding the systematization on the construction of the knowledge society in Cuba because they are isolated, and in many of the cases specific aspects of this category as society and knowledge are approached.

The approach taken by the Cuban authors on the knowledge society is to a large extent similar to the information society, which is an important but not decisive aspect. These aspects constitute an epistemic bias in the theoretical approach to this subject in Cuba.

The objective of this work is to carry out a didactic theoretical systematization of the construction of the knowledge society in Cuba in the subject of Social Studies in Science, Technology and Society in the Agricultural Engineering career, for this purpose, the theoretical methods of knowledge such as the analytic-synthetic and the inductive-deductive will be used. In addition to using the hermeneutic method in the process of understanding the knowledge society in the bibliography consulted.

Development

The term knowledge society has been used to describe the dynamics of today's societies, where knowledge is gaining centrality as a result of contemporary scientific and technological development and has become an indispensable aspect of progress. Its frequent use in fields as diverse as economics, pedagogy, computer science, philosophy, social sciences, offers an idea of the relevance of the subject and at the same time evidences a multiplicity and contradictory criteria when trying to define the term, making its analysis more complex.

This theoretical term has, in its content, counted on the contribution of important thinkers. The three most important exponents who studied the knowledge society as a category, each one from a different perspective, were Drucker (1993) from the post-capitalist society, Bell (1973) from the post-industrial society and Castell (2000) from the network society, all of them favored the epistemic clarification of this scenario for research.

In the 1990s, authors reinforced the concept based on the impressive expansion of information and knowledge accumulation, processing and transmission capacities. In the 21st century, researchers have presented their main reflections on the basis of conceiving the knowledge society in an integral and contextualized manner, based on the social, cultural and economic transformations of the society in which it is manifested.

From the search of the different referents of the term the research assumes the one outlined by Tobón (2017) which postulates:

The knowledge society should be understood as a set of communities that manage, co-create, socialize and apply knowledge in the identification, interpretation, argumentation and resolution of the problems of the context, with critical sense, collaborative work, ethics, change management and use of ICT. (p. 33)

This definition is assumed for the research since it is considered that it evidences the need to act ethically, through the search, processing, adaptation, creation, innovation and application of knowledge with collaboration and use of ICT, considering universal values. It is also a conception that can be applied in the construction of the Cuban knowledge society in its recontextualization.

In Cuba, the researches consulted on the knowledge society, although they did not delve into the conceptualization of the category under analysis, the researchers do offer valuable contributions regarding the role it plays in the incorporation of the main scientific and technical advances to this society. Thus demonstrating the existence of isolated references that indicate how this society has been built in the Cuban context. Among the main authors are Delgado *et al.* (2007), López and Zumeta (2021) and Núñez Jover (2022). The latter offers a definition of socialist knowledge society.

The study of the knowledge society in the current context of Cuba constitutes a necessity to advance and place us at a level of competencies that will contribute to form a scientific conscience to address each of the current problems. Its importance in the development model where the Vision of the Nation, the National Plan for economic and social development until 2030 and the Conceptualization of the Cuban economic and social model of socialist development are formulated, shows that there can be no true sovereignty, sustainability and prosperity without knowledge capabilities.

Going deeper into the characteristics that the construction of the knowledge society in Cuba must have must go beyond knowledge; it is about transforming society from long-term sustainable processes based on its application in production, economy, education and culture. Cuban society is currently immersed in a process of transformation in which the results of the application of science to society are important, but they cannot be spontaneous, but must have an instrument to guide these processes towards the social development of society.

Based on the shortcomings revealed in the study of the knowledge society in Cuba, as well as its current need, it is important to take into account the studies in science, technology and society (STS). These important studies were developed and born in the same context as the knowledge society in the 1960s.

Studies on the development of Science and Technology are currently the order of the day, the search for new concepts and elements that serve to demonstrate the construction of the knowledge society in Cuba as a generalizing element of the development processes that are currently taking place as a result of scientific policy in Cuban society. In which knowledge is still in function of the majorities, and in the solution of the great national problems. Hence its relevance, necessity and actuality.

The relevance of the knowledge society in Cuba and its necessity in the current context require its study from three essential dimensions: the epistemological one from a scientific culture, the practical one seen from the National Plan for Economic and Social Development until 2030 (PNDES 2030) United Nations Development Program in Cuba (UNDP) (2019) and the Government Management System based on Science and Innovation and the axiological one from the shared values. Taking into account that scientific knowledge at present is called to generate changes in societies, supporting collective actions, generating instrumental and technological innovations and concretizing historical-cultural profiles.

The study and systematization of these contents in the teaching-learning process is essential for the intellectual, political, ideological and ethical preparation of students, as well as their contribution to the cultural formation of values and social responsibility, so it is vital to prepare teachers to ensure a successful professional performance in future agronomists who play an important role in Cuban society.

Therefore, the subject of Social Studies in Science, Technology and Society allows providing students with a Marxist-Leninist understanding of their role as revolutionary professionals facing the problems of the environment, science and technology, inserted in the updating of the Cuban economic and social development model. From these elements it is necessary then the didactic systematization of the construction of the knowledge society in Cuba as a key issue for the development of the transforming capacities of society.

As a result, systematization is a category that has been worked from different conceptions in scientific activity, sometimes as a link in the teaching-learning process, principle, research method, type of class, among others, in all cases with its due foundation. Different authors have carried out studies or historical and pedagogical research in this field, this is what Cuban authors such as: Fiallo (2005), Addine (2015), Ramos (2020) have meant in their works from the importance of the use of systematization.

Considering the importance of this category in the educational teaching process and in the students' self-learning, the researcher considers it necessary to approach the term, for this reason some definitions and relevant contributions of some authors were selected.

According to (Addine, 2002, p. 25), systematization is defined as a methodological process that allows the reconstruction and critical analysis of educational experiences in

order to extract significant learning applicable to similar contexts. Fiallo (2005) considers “systematization as a fundamental tool for reflection and continuous improvement of pedagogical practice, facilitating the identification of good practices and areas for improvement” (p. 65).

Ramos (2020) defines systematization as:

A generalizing theoretical method used for the ordering of historical-pedagogical information obtained as a result of theoretical and empirical methods, which allows revealing essential knowledge, structuring, classifying and organizing them, so that they are truly transcendent, imperishable and constitute instrumental knowledge to be able to operate with them. (p. 170)

The definitions of systematization shown above have been varied in nuances and perspectives, hence the author assumes systematization as a process to organize and structure the knowledge and experiences acquired in educational practice, enriching and recontextualizing conceptions, allowing new concepts to transform the context.

In the systematization of contents, the teaching-learning process has an extraordinary value from the development of logical thinking in students through theoretical and practical generalizations. The study of this category in its historical development has become a tool that contributes to the didactic logical structuring of the teaching-learning process, as a didactic principle that favors the systematic and systemic character of this process. Hence, it is necessary to work on didactic systematization as an aspect that allows the search for new strategies to improve the quality of teaching and learning.

Over the years, several authors have contributed theories, methodologies and practices for the understanding of didactic systematization. In Cuba in the 1990s, the first researchers who unveiled the essential features of this process through ongoing teacher training were Addine, Páez and Calzado (1998). These authors, starting from the definition of didactic systematization, specify that its possibilities of use are centered on the following essential aspects:

To understand and improve the didactic practice, explaining how the experience was developed, why it happened in that way and not in another, what changes were produced, and why. To share with other similar practices the lessons learned from the experience and to theorize and generalize what was learned. (Addine *et al.*, 1998 cited in Valenzuela, *et al.*, 2020, p. 142)

For Heredia (2018), “didactic systematization requires the training of teachers under the guidance of a teacher so that they can reconstruct, make explicit, explore and characterize their didactic experiences, arguing from theory, comparing differences, communicating and making explicit the logic of the process”.

Analyzed these definitions of didactic systematization, as well as its various manifestations during its evolution, it is then considered that this is a process that organizes, reconstructs and structures knowledge from educational practices and experiences to develop and transform what has been learned and enrich the educational process.

The work developed in the discipline and subject collective to introduce in the subject of Social Studies in Science, Technology and Society, in topic III, this theme related to the didactic systematization of the references and theoretical foundations for the construction of the knowledge society in Cuba from its three dimensions, will allow the student to appropriate practical and theoretical tools to participate in the construction of this society, from its mode of action and its influence on sustainable agricultural development.

This was done according to the following algorithm:

- Determine the historical, conceptual and methodological dimensions, which constitute referents of the study of the knowledge society, as well as the main texts that delve into the study of this society and other sources that are contributive from the data and perspectives assumed from a critical and reflective position.
- The evolution of the knowledge society and its particularities in the Cuban context.
- To delimit the gnoseological, practical and axiological dimensions as the most essential in the frameworks of the present study and its necessity in the current context to obtain an integral vision of the knowledge society in Cuba and its implications in the socioeconomic development of the country.

Based on the proposed content and facilitating the integration of knowledge for new learning, didactic activities were proposed that enriched the didactic systematization process to promote active and meaningful learning in students:

Taking into account that currently the unit of criteria around the concept of knowledge society is polysemic as far as it could be verified, it is necessary to use conceptual maps to graphically represent the relationships between the concepts of society and knowledge, based on the analysis of research and scientific production between the end of the

twentieth century and the beginning of the twenty-first century. This will allow the student to use these conceptualizations effectively in the transformation of Cuban social reality.

For the work on how this society is assumed in Cuba from its regularities and referents for the development and transformation of the country, from the epistemological referential framework provided by the studies in Science, Technology, and Society (STS), synoptic tables will be made from the main Cuban authors who have worked on these topics.

Summaries will be made integrating the conceptions of the knowledge society, the referents of the construction of this society in Cuba and its epistemological framework, all aspects to be taken into account to expose the relevance of the knowledge society in Cuba and its need in the current context from three essential dimensions, the epistemological one from a scientific culture, the practical one seen from the United Nations Development Program in Cuba (UNDP) (2019), the National Plan for Economic and Social Development until 2030 (PNDES 2030) and the Government Management System based on Science and Innovation and the axiological one from shared values.

Debates and discussions will be developed: to promote critical reflection in students from the analysis of the epistemological, practical and axiological dimensions that demonstrate the relevance of the knowledge society in Cuba and its need in the current context, taking into account how scientific knowledge today is called to generate changes in societies, supporting collective actions, generating instrumental and technological innovations and concretizing historical-cultural profiles.

From the work carried out in the Subject of Social Studies in Science, Technology and Society to carry out the didactic systematization, the following results are shown in the students:

- Improvement of critical, analytical and professional competences, epistemic resources are provided that allows them to value the relationship of the development of science and technology in the knowledge society in Cuba, as a key aspect for the transforming competences of the current Cuban society.
- It facilitates the process of analysis through principles, concepts and alternatives that allow transforming reality.

- Social responsibility and ethics, key elements provided by the subject to apply sustainable practices and technologies in the management and improvement of agricultural production systems, constitute an essential aspect in the construction of the knowledge society in its practical dimension, allowing future agronomists to design, implement and evaluate strategies for sustainable development.
- The proposed content allows the achievement of a developmental learning from the development of productive methods in the teaching-learning process.
- Integration of knowledge, the construction of the knowledge society in Cuba requires dialectical thinking, a scientific conception of the world, where students are able to consolidate their humanistic training and contextualizes learning from multiple perspectives to increase labor productivity, promote innovation and help make better decisions.
- It stimulates cognitive independence and the development of logical thinking.

The work developed allows confirming that there are theoretical foundations that demonstrate the construction of the knowledge society in Cuba as a phenomenon of social reality; it can be recontextualized, although it has been little studied, conceptualized and systematized. The study of this process uncovers significant relationships, whose articulation expresses the singularity of this subject in the Cuban context. Hence the need for students to appropriate these tools so that they can understand the great challenges facing the country in its purpose of building a more equitable and inclusive country where problem solving is privileged with a systemic, ethical and transformative approach, which strengthens the Cuban social fabric.

The research allowed to verify in the students a greater approach and interest in these topics where the role of knowledge as a fundamental element within human activities, reveals the practical-theoretical need to assume the knowledge society as an essential key for the development of transforming capacities. Another aspect of great significance was their critical and reflective attitude when approaching these topics taking into account ethics and social responsibility as future professionals.

Conclusions

The didactic systematization of the construction of the knowledge society in Cuba, responds to the needs and demands of Higher Education in the current context where the management of knowledge in social matters, demands continuous learning of how to reconfigure the existing technological and social capacities to form a professional with critical, reflective and transforming thinking.

The articulation of this content in students raises the integral formation of the Agronomist Engineer, preparing them to face the challenges in the context of the knowledge society in Cuba, allowing to improve their professional competences and their social and ethical responsibility. All this from the development of projects that allow the promotion of a sustainable agriculture based on the precepts indicated in the conceptualization of the Cuban economic and social model of socialist development.