

## **Economics of education: a science in sustainable and innovative development**

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### **ABSTRACT**

The article is a carrier of partial conceptual elements of a doctoral research that contributes to the formation of an economic culture in pedagogical decision-making by provincial methodologists of education, having as one of its objectives: to deepen the theoretical study of economic aspects related to education considering the analysis of economic aspects of educational processes. Analysis-synthesis, historical-logical, modeling, interview, documentary analysis, triangulation, pre-experiment methods were used to establish their linkage with management indicators that make it possible to evaluate the efficiency and effectiveness of the educational teaching process with respect to its development trend.

**Keywords:** Training cost; Management indicators; Efficiency and effectiveness of the educational teaching process

### **Introduction**

There are numerous relationships and interactions between economics and education, which makes economic considerations on education transcendent and unavoidable due to the large amount of resources demanded and allocated to it; In fact, educational processes

integrate, involve and determine many economic aspects of great importance for their operation, systematic improvement and the degree of efficiency achieved; therefore, the social profitability of education will depend on the effectiveness with which the allocated resources are administered, considering it from the economic control and evaluation of costs in relation to the pedagogical benefits obtained.

In coherence with this, the following problem is addressed: insufficiencies in the continuous training in economic culture of provincial education methodologists, limiting their professional preparation in terms of mastery, understanding and implementation of the educational cost-benefit relation, within the framework of the Economics of Education, whose solution is complemented with the conceptual assessment that is carried out.

Since the works of Schultz (1960) and Becker (1983), it has been considered, although not unanimously, that education has a major influence in all areas of a society. Consequently, this requires an investment in this direction, which generates economic social returns and tends to contribute significantly to the socioeconomic development of the country.

The above, together with the planning of educational services to meet territorial demands, the necessary balance between the effectiveness, efficiency and equity of education, economic management, as well as the preparation of the required labor force, show the existing and inevitable dynamics and interrelationships between the educational and economic spheres.

These points of interaction justify the economic study of educational phenomena that favored the emergence of the Economics of Education, which has not always been one of the preferred areas of specialization for economists, nor has it always been of interest to the majority of educators. However, the growing development in the application of economic analysis to all areas and the sustained interest in education as an instrument of development have revitalized the attention related to the responsiveness that economic analysis can bring to the educational field (Puentes, *et al.*, 2020).

These considerations, associated to the Economics of Education, dignify the conceptual proposal provided in order to achieve the adequate quality of the educational teaching process, as a support to the professional preparation of the provincial methodologists of Education.

## **Development**

The economics of education is based on an autonomous science: economics, which approaches the aspects and implications of educational phenomena from an economic point of view, all of which contributes to its understanding, based on the contributions of its integral approach to the improvement of education without constituting norms of how education should function. In this regard, the researchers Grao and Ipiña (1996) consider that:

Although due to its object, the Economics of Education can be considered as a Science of Education, it is necessary to insist, in order to make it clear, that it is not a branch of Pedagogy but, as has been emphasized, it is located in economics, with its own methods, thematic fields and developments. (p. 38)

The Economics of Education as a science describes, bases and systematizes its formal object related to the economic aspects and effects of education seen, on the one hand, when analyzing the expenditure involved in education as a factor of economic development, and on the other hand in the analysis of the economic aspects of educational processes, such as costs, financing and social profitability conceived from the planning of education. (Bastidas, 2020)

The consolidation of this science is based on an integrating process, in the sense of the important contributions made by the different social sciences. Thus, although at the beginning the reflections came almost exclusively from the field of economics, gradually references from philosophy, sociology, psychology and pedagogy, among others, have been incorporated, thus generating an evidently interdisciplinary conception.

Education has always been present in the reflections of economists since the beginnings of economic science. However, the economics of education, whether conceived as a specialized branch of economics or as a science of education, emerged in the early 1960s, making it a relatively young science.

Among the most complex areas of educational research is that related to the articulation of economic principles to education, in order to contribute to perceive how educational

systems work, the effects of the allocation of resources of all kinds on their behavior and how to evaluate the results and impacts in correspondence with educational management indicators. Nevertheless, the use of economic principles in education represents challenges and opportunities, given that education is not a typical market good or service, but rather a social and cultural phenomenon involving multiple stakeholders, values and objectives. (Bastidas, 2020)

The Economics of Education as a discipline was born from considerations related to human capital, referring to the importance of the training of people on production and economic growth (Becker, 1983). From that moment on, human capital has experienced such a diffusion that it is now considered synonymous with education or training, and it is around this concept that the theory on which it was based was developed.

The history of science as such shows intermittency in its development and scientific production. In the 60s and 70s of the last century, a period of boom and apogee of the discipline began, to the point that it has been called the golden years of the Economics of Education; after the announcement by Schultz (as cited in Herrero, 2000) of the new term human capital and the emergence of the theory of the same name, the discipline began to develop at a frenetic pace, largely due to the prevailing economic tranquility, the absolute confidence in education as an instrument of social movement and improvement, as well as social investment in education of great magnitude and constant growth.

The research contributions contributed to the development of the new discipline and created the categorical body that would give rise to the Economics of Education, although with certain differences, they coincided in the importance of education for the development of individuals and society, aimed at identifying the degree of contribution of education to development, meaning the creation of economic models to plan education effectively, thus laying the foundations for subsequent studies on the reciprocal incidence between economics and education.

Several international organizations, such as the Organization for Economic Cooperation and Development (OECD), the United Nations Educational, Scientific and Cultural Organization (UNESCO), as well as the World Bank, played a decisive role in the development of the discipline in the 1960s, sponsoring meetings of specialists, as well as promoting some of the most important studies on education and economic development.

From the 1980s and 1990s onwards, Western society underwent significant changes that would affect the development of Economics of Education as a discipline; therefore, the sustained increase in the demand for education, characteristic of most educational systems since the end of the Second World War, began to diminish. The confidence placed in education as an indispensable instrument to achieve social equality faded away, giving way to a distrust related to the economic effects of education and the certainty of its contribution to the maintenance and/or increase of social differences.

In conjunction with this, most governments, concerned about the sustained increase in inflation, youth unemployment and the imminent excess of highly educated individuals, decided to cut education budgets and slow down the expansion of education. Thus, the educational policies of most governments in this decade were characterized by a shift from quantitative expansion to qualitative reform of educational systems.

The interest was no longer focused on ensuring that education was accessible to the entire population, but rather, once this objective was achieved and given the socioeconomic changes of the time, the interest was concentrated on improving the educational system and the efficient and effective use of available resources.

This prevailing socioeconomic reality conditions the appearance of important changes for the discipline. In the first place, economists ceased to play the fundamental role in educational administration, and psychologists and pedagogues began to play this role as experts in educational quality, and secondly, scientific production in the subjects of study initiated in the 1960s decreased considerably, and in some sectors even disappeared, mainly due to the considerable loss of interest in the contribution of education to individual and collective economic growth.

However, as Blaug indicates (as cited in Gómez and Navarro, 2004) “the Economics of Education does not disappear completely as a field of academic study in this decade, quite the contrary” (p. 24). During these years there was a vigorous development of the discipline in new directions, to such an extent that it is considered as a second generation of educational economists to differentiate the new works from those carried out in the 1960s by the first researchers, who make up the so-called first generation.

The authors focus their interest on new and hitherto unpublished topics, but fundamental for understanding the economic implications of education. Thus, they began to study the supply of education as a determining factor of demand and as a decisive element in all

educational planning; studies were carried out on the financing of education, the various existing models and their consequences in terms of the efficiency and equity of the educational system; priority was given to studies related to the relationship between education and the labor market and the potential of education as a tool for labor market insertion.

The most significant changes in the discipline during these years were brought about by the institutionalist and radical economists of the United States, who emphasized the socializing function of education to the detriment of the professionalizing function defended by their predecessors, with the intention of partially invalidating the pure version of the theory of human capital. These important changes in the theoretical conception of the Economics of Education are motivated by criticisms of the original version of the initial theory of human capital and favor the appearance of other alternative and complementary theories such as the theory of the filter, the theory of attitudes and the theory of the segmentation of labor markets.

At the beginning of the 1980s, Western society underwent a series of socio-economic changes as a consequence of a more global phenomenon: the implementation of economic neoliberalism on a worldwide scale. In the context of a severe global economic and financial crisis, the possibility of maintaining the existing welfare state and the role and influence of the state in economic issues began to be questioned, and therefore, from the hegemonic position of neoliberalism and its representatives, the relationship between education and the economy was reconsidered (Gómez and Navarro, 2004).

The researcher Sante (as cited in Calderón *et al.*, 2008), makes an analysis of neoliberal thought and considers that, under the perspective of this current, the freedom to exercise work, the operation of companies and consumption, enhance possible advantages over the conception of an economy rationalized by state intervention, assuming that the protagonist is not the state or the community, but the individual, ultimately, the consumer. From this point of view, public spending was considered excessive and inadequate, and was seen as the cause of uncontrollable inflation.

Accordingly, the representatives of the neo-liberal current proposed to move from the welfare state, initiated in the post-war period and intended to guarantee basic social services for the entire population, to a minimal state that would promote broad freedom in the economic activities of individuals, so that the application of neo-liberal thinking generated substantial changes in the field of education and in its economic analysis. Thus,

the questioning of the effectiveness of social spending from the new economic rationality imposed reductions in public resources allocated to education, which was accompanied by a discourse of efficiency, profitability and productivity in most of the studies carried out.

Already in the 1990s, a new element emerged that was to play a leading role in much of the research in Economics of Education: evaluation, where educational institutions are evaluated from an effectiveness perspective, to verify and control educational management processes and the results achieved in order to use these results to determine the resources to be allocated to education. At the end of the 20th century and the beginning of the 21st century, the Economics of Education not only diversified in terms of the study of the external effects of human capital, but also acquired great significance in the analysis of education from an internal point of view, based on the analysis and assessment of the quality and relevance of educational systems.

In the Latin American region, there are two fundamental trends related to the approach to education: one openly neoliberal, which conceives education as a social expense, considered a burden for the states and, from this trend, considers privatization as the appropriate way to reduce the high costs that an intentionally economic orientation brings to the study of the education-economy relationship. The other, typical of the performance of progressive governments with an essentially social projection, marked by a conception of sustainable human development, which recognizes the true importance of knowledge, when it is at the service of society as a whole, and solidarity among countries to assume development from a social perspective.

At the national level, the education-economy relationship has not been sufficiently considered from scientific research in the Educational Sciences, which currently makes it difficult to reveal with sufficient scientific rigor the implications of this relationship in the management of training processes at all levels as well as postgraduate improvement; However, in the context of the process of updating and perfecting the Cuban economic and social model and the norms related to the planning and internal control systems, interest in the economic aspects related to education has increased, due to their impact on the study of the educational processes developed in all institutions.

Regardless of the fact that the Economics of Education is a relatively young science, research lines are currently being developed in many countries that will undoubtedly contribute to provide it with key elements to continue consolidating its status as a science

with results of significant importance, in correspondence with its object of study, among which the following stand out:

- The contributions of economic theories to education.
- Education, economic growth and development.
- Educational planning from an economic perspective.
- Educational cost-benefit analysis.
- Efficiency, effectiveness and equity in education.
- Economic management of educational centers, among many others.

Most of the above lines of research require an interdisciplinary treatment with the intervention of pedagogical, economic, sociological and psychological disciplines, among others, and in general, both the methods and the analytical and treatment procedures and tools used for research in this field have been those of economists. Therefore, the extension of the field of study of Economics of Education has been carried out from an economic perspective, contributing to the understanding of the educational phenomenon in all its dimensions, and enabling a multidisciplinary approach to it.

The last decades have been characterized by a gradual transition from the industrial society to the knowledge and information society, where new global economic environments and new social situations are created, and generating important changes in the labor market with serious social consequences. This situation has led many educational economists to devote time and resources to the study of the relationship between education and work in the current context, in order to propose alternatives that contribute to positively influence the pressing problem of access to employment and give more coherence to the often contradictory relationships between the labor market and education.

In spite of the fact that the Economics of Education as a science has traveled a path plagued with contradictions, has been valuable both in empirical works and in theoretical conceptions and reflections, at present it cannot be affirmed that there is a solid and widely accepted theoretical body that allows explaining the economic value of education as a development factor, analyzing in depth the economic aspects linked to educational processes in the economic analysis of society, which means that it is necessary to multiply efforts to make progress in such a basic field for the knowledge and functioning of society.



In the current context, the Economics of Education is called to become a key reference if it is to contribute to the transformation of society in a well-founded and conscious way, therefore, it is valid to reflect on its scientific character and place it in the set of Educational Sciences and this is linked to the debate on the existence of various Educational Sciences whose position, mostly accepted and shared by the author, is the recognition of a set of sciences that study educational phenomena: Pedagogy, Philosophy of Education, Sociology of Education, Educational Psychology, Educational Management and Economics of Education, are included among them.

In recent years, a debate has begun on Pedagogy and Theory of Education, focused on demonstrating the synonymous character of both when referring to the same reality, or the divergences that separate them and generate two different disciplines in correspondence with the conceptions exposed for it, in this regard it is considered that pedagogical

Knowledge is provided by the so-called Sciences of Education, “as a multiple and varied set of sciences that study certain aspects of education and that at the beginning were studied unitarily by Pedagogy” (Fernandez and Carbonell, 2017, p. 11).

Pedagogy is considered to synthesize and give cohesion to the diversity of perspectives that analyze a common reality - education - and establishes the practice of education considering the different formal, non-formal and informal educational processes. Meanwhile, the Theory of Education, of Anglo-Saxon origin, has as its object the theoretical study of education, so it is equal to the classical conception of Pedagogy and due to its Anglo-Saxon origin, the Theory of Education “summarizes all the pragmatist and utilitarian tradition typical of these landscapes” (Fernandez and Carbonell, 2017, p. 12), thus separating itself from the German pedagogical tradition, more reflective and philosophical.

Therefore, the Theory of Education is concerned with knowing the educational reality in order to intervene in it, based on its optimization and adopts and integrates the knowledge coming from the Sciences of Education and other sciences, considering rules of action that lead to the improvement of educational practice.

The Economics of Education is based on an autonomous science, Economics, and addresses the economic aspects and implications of educational phenomena, adopting the

empirical knowledge of economics and its scientific methodology to analyze the complexity of education as a whole. As such, it is an independent science of education, which analyzes educational phenomena from an economic point of view and contributes to their understanding, based on the contributions of its integral approach to the improvement of education without constituting norms of how education should function.

The Economics of Education is the science that deals with the analysis of the economic implications of educational processes. The emphasis is placed on economics, since it contributes its theories, methods and procedures in order to facilitate the understanding of the economic aspects that affect education.

Economics, as a science with a significant impact on society, gradually expanded its field of study to other areas and was introduced into other scientific knowledge, thus creating disciplines such as Health Economics, Family Economics, Business Economics and Economics of Education, among others. In the case of the latter, as knowledge, it does not regulate how education should be carried out, but rather, based on the empirical knowledge of a science external to pedagogy such as economics, it contemplates specific aspects of educational phenomena in the economic order, which influence educational success.

In this sense, Grao and Ipiña (1996) illustrate it as follows:

Although by its object the Economics of Education can be considered as a Science of Education, what we must insist on, to make it clear, is that it is not a branch of Pedagogy but, as has been emphasized, the interpretation of economics, with its own methods, thematic fields and developments. (p. 22)

In reference to this, Pineda considers that the Economics of Education is “the discipline that studies the economic aspects of education and the effects it has on economic activity at the level of growth and development” (Herrero, 2000, p. 148). Among these aspects are its demand, financing, provision, profitability, quality and costs.

In the author's conception, this is considered a science rather than a discipline, since the discipline constitutes a systematized set of knowledge, programs and purposes that refers to a certain area of human knowledge and whose results are not always obtained through a scientific methodology, on the other hand, science is related to the set of scientific knowledge, systematically structured from observation, reasoning and experimentation

in specific areas, from which hypotheses are built, principles are deduced, theories, general laws and systems organized by means of a scientific method are elaborated.

Based on this, the Economics of Education is conceived as the science that studies the economic aspects of education, taking into account the effects it has on economic activity at the level of growth and development, considering, in addition, that like all scientific knowledge, it describes, supports and systematizes its formal object: the economic aspects and effects of education.

Consequently, considering the criteria of several authors, Grao and Ipiña (1996), Herrero (2000), Calderón *et al.* (2008), as well as Fernández and Carbonell (2017), and in correspondence with the author's conception, the object of study of this discipline is considered double: on the one hand, it analyzes the economic value of education as a factor of economic development, and on the other, it analyzes the economic aspects of educational processes, such as costs, financing, social profitability and the economic planning of education.

Therefore, it is observable that the consolidation of this science as such has followed an interdisciplinary process, in the sense of the important contributions made by various social sciences and other disciplines. Thus, although at the beginning the reflections came almost exclusively from the field of economics, reflections from pedagogy, sociology, law and psychology, among others, have gradually been incorporated.

The content of this article is based on the fact that there are numerous relationships and interactions between economics and education, considering that educational processes integrate, involve and determine many economic aspects of great importance for their proper functioning, and these points of convergence between economics and education determine the economic analysis of educational processes.

Education demands a significant level of resources of all kinds, in a global and national context in which these are scarce, which demands to distribute them according to the satisfaction of the ever-growing needs of individuals at all levels, hence the importance and the unavoidable nature of economic considerations to ensure a quality education using efficiently what is allocated. The level of effectiveness achieved and the efficiency with which the available resources are administered will determine the social profitability of education, taking into account the pedagogical costs and benefits it generates.

Therefore, education is considered an investment for the future, since the level of integral development that it induces in people contributes to increase their preparation to successfully face their insertion in the labor and social life, therefore, education generates economic social returns, which corroborates the close relationship between economy and education and the contribution of the latter to the country's economic growth.

The educational administration is responsible for planning educational services, so that their development guarantees the optimum quality required for the integral formation of the new generations, in correspondence with the context and needs of each territory, based on the availability of the necessary resources to support the educational process.

Thus, educational planning, as a process of primary importance in order to achieve efficiency and effectiveness in educational services, is another area of contact between education and economics, which, together with the issue of quality and effectiveness of education, addresses another aspect of great relevance today: the equity of educational systems and the impact of economic decisions on equality of opportunities in the field of education. Es conocido que la educación aporta beneficios individuales y sociales, de ahí que el equilibrio entre la eficacia y la equidad de la educación, como principio ético normativo asociado a la idea de justicia social, es otro de los indicadores económicos de los procesos educacionales.

Educational services are planned, but they require the allocation of basic resources and financing for their development, and the forms of financing differ according to the considerations in this regard in each country: educational financing systems can be public, private or mixed in an infinite number of possible combinations, in the arguments for or against each type of financing underlies a marked ideological character, but also an economic one, taking into consideration that the economy has a lot of ideology, so that this relationship is another point of interaction that justifies the economic study of educational processes.

The allocation of essential basic resources of all kinds for the development of educational processes must be optimally managed and administered, so it is necessary to resort to the principles of microeconomics, to elaborate models and procedures of economic management that facilitate the administration of resources, achieving optimal results. Thus, in the economic management of budgeted units and educational institutions, optimization appears as another aspect that relates economics to education.

In fact, one of the principles that sustains Cuban education is the combination of study-work, a fundamental expression of the link between theory and practice, school and life, and teaching and production, which is deeply rooted in Martí's conceptions of education and summarizes the most progressive aspects of the Cuban pedagogical ideology; this is the fundamental basis for its application at the different educational levels to combine two fundamental objectives, one formative and the other economic.

The formative objective seeks to develop a conscience of producer of social goods, to create the conditions to eliminate the prejudices derived from the division between intellectual and manual work, aimed at eliminating intellectualism in teaching and promoting interest in the surrounding world.

The economic objective is to integrate into production or social work the capacity of hundreds of thousands of schoolchildren who, by adequately dosing the time of regular study complemented with participation in production, extensive to all conceived activities, contribute in a concrete way to their own food subsistence and to the production of material goods for society as a complement to their integral formation. The arguments addressed, consolidate the criterion that the interrelations between economy-education exist and justify the economic study of educational phenomena.

In Cuba, the determination of training costs per student in the different education subsystems is studied in depth, also taking into account the categories of centers, as well as the valuation of the budget associated with educational management indicators as lines of research that relate economics with education.

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In the methodological bases for the determination of the formation costs for students in the educational institutions thinks about that:

The formation costs for student, represent the monetary expression of the expenses of different nature associated to the formation of a student, those which, as standard cost, they constitute patterns that allow to quantify the impact of the institutional administration in the execution of the budget and they should constitute the base of the process of planning (preliminary design). (Correa, 2015, p. 8)

The application of these methodological bases allows to determine the costs of reference formation in each educational level and center type. The analysis of these costs in the different institutions, as well as in the corresponding levels, it allows to consider the costs peculiar of the centers, to establish the corresponding comparison among them according to the specific characteristics of the center and with it, to make the pertinent corrections, of being necessary, starting from the existent deviations according to the departures, elements or sub-elements of expenses approved in the normative ones effective in the country.

To guarantee an education of quality, massive, equal and gratuitous in Cuba, one works in function of consolidating, until level of educational institution, the planning, use and control of the assigned budget. Nevertheless, it is insufficient the bond that settles down among the administration indicators that demonstrate the efficiency and effectiveness of the educational educational process with the budget, as a result of the work coherence required among the educational and economic-administrative areas that he/she allows to carry out with depth the relative valuations to the execution of the budget starting from linking that executed with the results reached in the materialization of the execution of the foreseen objectives not being always achieved.

Considering, for it, among the main administration indicators, the attendance of workers and students, quality of the imparted classes, decrease of the educational personnel's exodus, the school retention, efficiency in the cycle, as well as the use and care of the resources of base study material and life, all with a direct incidence in the integral formation of the new generations and, therefore, significantly transcendent in the time.

## **Conclusions**

In correspondence with the assessments made, in Cuba, it is necessary to deepen the studies related to the economic evaluation of education, starting from considering the main management indicators at the educational levels and institutions and understanding the relationships between the use of the budget, the resources allocated and the quality of the educational service offered.

It should be noted that the analysis of non-monetary benefits in human capital, although more difficult to assess than direct monetary effects, is of interest to economists and educators and constitutes a very promising line of research, especially in aspects related to the analysis of the educational cost-benefit ratio for making pedagogically argued and economically sustainable decisions, to which methodologists at different educational levels should pay special attention.

These ideas dignify the relationship between two categories closely linked to social development: education and economics, although it is considered that any attempt to reduce the educational fact to the analysis of costs, expenses, profits or social profitability only, detracts from the humanistic essence of this relationship; but at the same time, it does not ignore that this relationship expresses the need to analyze the problems related to the rational use of resources of all kinds and the evaluation of the economic aspects of the educational process to make sound strategic decisions.