# The Decay of the Human Capital Theory in Latin American Higher Education Systems

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This article is the result of the analysis of the various theoretical visions that have been developed from the world of economics and have consolidated and permeated the future of educational systems with the impact on people and the development of countries, emphasizing how political and social decisions have been oriented from this economic perspective of profitability and productivity, rather than from a social perspective. Starting from a chronological review and analysis from the conventional neoclassical paradigms to the new perspectives arising from the economics of education, the reflection is focused on phenomena such as supply and demand, the efficiency of educational systems, and how these are similar to any other production process. As a conclusion, it is established that the application of economic visions presents inconsistency between the ontology that the mathematical models implicitly presuppose and the ontology that effectively characterizes social reality. Thus, the formalization requirement implicit in the Human Capital Theory cuts out important aspects of social reality that are essential to understanding and explaining educational phenomena.

Keywords: economics of education, human capital, social profitability, educational systems

## **INTRODUCTION**

The relationship established between economics and education is not new. The thesis stating that educational processes and systems have an impact on economic development and on the welfare of the population has been defended throughout the history of economics, leading to the creation of a specific discipline to address this area, the Economics of Education.

The economic analysis of education involves considering and evaluating several factors and aspects that determine how educational resources are allocated to achieve social welfare. Waste or improper use of resources can have serious implications for the social and economic well-being of individuals and society as a whole. For this reason, and given that economics is a social science that studies scarcity, emphasizing efficient allocation, the economic analysis of the educational phenomenon plays a vital role in the planning of the educational system.

The economics of education is not a new science, but has evolved since Adam Smith's The Wealth of Nations in the 18th century. In 1961 Theodore Schultz established the first systematic study that gave rise to what is now called Economics of Education. Schultz, as well as other prominent economists, dedicated

themselves to the task of applying the tools and methods of analysis of neoclassical economics to many educational matters, laying the foundations of the Human Capital Theory. The historical importance of their theoretical model lies in the fact that for the first time the scientific analysis of measurable variables in education is used.

Although neoclassical economics has dominated and led the development of the economics of education, becoming the paradigm used when planning the allocation of resources to the educational system, there are other approaches and methodologies that are becoming increasingly popular today, given the failure of neoclassical economic theory to deal with the financial crises of first world countries.

Thus, for example, the new institutionalist paradigm, which questions the principles of neoclassical theory and its rigidity, seems to provide a more appropriate and realistic view of the educational phenomenon. Neo-institutionalist theory emphasizes the social aspect of education and the actual operation of labor markets, which do not operate under strict neoclassical assumptions. This theory is based on the premise that labor markets are segmented into (core) jobs in large corporations and (peripheral) jobs in relatively small companies, with different degrees of competition between them. This split involves differences in wages and therefore in the determination mechanisms suggested by neoclassical theory. Although the entry requirements for jobs have increased, the tasks required and the level of training linked to them have remained constant, underscoring the fact that educational attainment is only used as a screening or filtering indicator by companies when hiring their employees.

This more accurate characterization of the current state of the labor market serves as a basis for raising arguments to challenge the neoclassical thesis that establishes a deterministic relationship between an individual's level of formal education, his or her level of productivity and, therefore, the social contribution of education. The new institutionalism view conceives education as an organic rather than a mechanical process, allowing the incorporation into the analysis of the educational phenomenon of those variables that neoliberal theory considers insignificant. These aspects refer to qualitative and normative elements ranging from the socioeconomic status of students to the way in which educational public policies are designed, deliberated and implemented.

Currently, the nations of Latin America and the Caribbean are transforming their productive patterns, the depletion of natural resources, global warming and the advent of the knowledge society, have led Latin American nations to undertake deep educational reforms, whose theoretical background rests precisely on the Human Capital Theory. In times of a globalized economy, of a third scientific and technological revolution, of a fourth economic sector development, knowledge acquires an unusual and vital relevance in the development of nations, and as a consequence of the fact that much of it is created and retransmitted from the formal educational systems, especially from the higher education levels, it is established as a pressing need to analyze the relevance of the theoretical precepts of the Human Capital Theory.

#### **DEVELOPMENT OF ARGUMENTS**

#### **Economics of Education: Conventional Neoclassical Paradigm**

It is important to consider that not all neoclassical economists subscribe to some or all of the following descriptions, which is why the conventional term is used. The scope of this view of the Economics of Education extends to the concepts of human capital, internal or productive efficiency, economic growth, labor market, financing, and the equity versus efficiency debate.

#### Human Capital

The human capital concept, introduced by Schultz in the 1960s "Investing in Man: An Economist's View" and subsequently picked up by many economists of education, considers labor and the ability to work as a form of capital, similar to a building, factory or machine. This form of capital is called human capital, in the sense that any investment in it should improve productivity. Therefore, any investment in human capital, in the form of education, training, health or anything else that positively impacts the person, should provide future benefits that will be reflected in higher incomes, not only for the educated individual but also for society. Human capital is an "intangible asset of a strategic nature for nations, as it is the

indissoluble link between the generation of highly trained human capital and the production and dissemination of knowledge that favor the formation of fairer societies and more competitive economies" (Pedraza, 2020, p. 29).

The question that arises is: Which resource is the more productive capital, physical or human? . In order to determine the answer to this question, a variety of techniques have been used whose central focus is on cost-benefit or cost-effectiveness formulas. However, education is not a typical economic good, and many of its properties and objectives, such as equity, do not fit the traditional market framework. Cost-benefit analysis does not measure all external costs and benefits of education.

#### Internal Efficiency

Internal efficiency focuses on the relationship between the allocation of resources and their profitability in the education production process, thus, "higher education is currently one of the main instruments available to public authorities in their attempt to ensure the development of their countries. Public spending for this purpose is therefore considered an investment in the future" (Xu & Gonzalez, 2020, p.161). To evaluate the outcome of a given allocation of resources, a cost-effectiveness technique can be applied in order to compare different alternatives to determine the most optimal one, in terms of obtaining a result.

On the other hand, it is possible to apply production functions to educational programs through regression analysis to explain the productivity of these programs, such as standardized test scores. However, many problems regarding the construction and implications of this technique have caused considerable criticism, and therefore there are authors such as (Alfonso, Vidal, & Soto, 2020, p.4) who state that "Decision-making to improve the levels of relevance, equity and educational quality should be based on knowing the different factors that affect academic performance in higher education, in a more comprehensive manner, obtaining both qualitative and quantitative results to promote a more complete approach". Such an approach allows us to infer that increasing the level of education of the labor force is essential for economic growth and that this is reflected in increases in the level of national income. However, economists have not been able to quantify the direct contribution of education to economic growth.

It can be seen from the above that employers, under the logic of profit maximization, should look for more educated workers to improve the productivity of their companies, and for this reason society should consider the educational system as a factor that generates productivity.

Human capital theory assumes that educational services meet the needs of companies in terms of the productivity of their labor force. However, what it means to be productive is not clearly explained in this theory. On the other hand, public or collective action is required to ensure that an efficient level of educational services is being produced, so that external benefits can be captured by society as a whole and that the distribution of production costs is shared equitably across society through the tax burden. To express it in economic terms, the tax scheme should generate the least distortion in the optimal market allocation as indicated by Pareto efficiency; taking into account, among other things, the cost of its collection and distribution. However, it is important to mention that not all neoclassical economists subscribe to the idea of involving the government in the production of education. Many of them call for the privatization of the educational market, arguing that pure market mechanisms are more efficient and profitable than those markets in which the state occupies a controlling role (Friedman 1962 and Lieberman 1989), pointing out that the preservation of freedom should be one of the educational objectives.

In several Latin American countries, financing policies have been developed under this logic, "using instruments such as formulas according to input, results, performance contracts and specific allocation, and have increased the participation of the private sector and direct subsidies to demand" (p.112). "These funding policies seek specifically to improve the efficiency, quality and equity of higher education, through the incorporation of mechanisms that promote via economic incentives, the alignment of objectives between governments and Higher Education Institutions" (De Fanelli, 2019, p.112).

#### Equity in Education

The issue of educational equity opens a wide area of discussion and conflict as to whether equity is more important than efficiency, or vice versa. Neoclassical economics does not provide clear answers on this issue. In general, neoclassical recommendations simply indicate that the effort to achieve equity should be undertaken in such a way that the cost of such an effort is the minimum, leaving it to the ideological political process to determine the priority of resource allocation.

The issue of equity belongs to the socializing role of education, which neoclassical economists rejected. They have been concerned with determining the strength of the relationship between education and income distribution. In this context, the only general conclusion that can be drawn seems to be that, throughout the 20th century, increased schooling of the population may be correlated with higher levels of GDP, but there is no guarantee that this correlation can be extended to the quality of formal studies.

#### The Purposes of Education

The business world's view of the economic contribution of education is changing. Although some economic sectors have adapted quickly and see education as a valuable partner, the attitude of the vast majority of them remains unchanged. Although the industry, viewed as a whole, seems to be quickly recognizing that production efficiency is, in the end, merely the efficiency of producers, there is still a fear that investing in and changing traditional educational processes may generate some unwanted drawbacks. On the other hand, it can also be seen that certain segments of our higher education system value themselves outside the economic context, unduly emphasizing that their curricula are academically pure. This situation represents a potentially serious philosophical and ethical conflict between the planning of resource allocation to the educational system and the traditional view of the role of education in a democratic society.

In its traditional role, the purpose of education was to enable people to reach their full potential in order to achieve their own goals, many of which go beyond the economic categories even in their marginal conception. In contrast, under an economic approach these objectives are restricted to the process of insertion in the labor market and the labor requirements of a society, therefore the state only intervenes in the educational system with the purpose of directing the supply of educational services in coherence with the development of the productive and economic matrix, as expressed by (Cantú, 2013) the "... current economic model is distinguished by favoring a global market economy, focused on specialization with mass production and having economic growth as its main purpose; it also promotes competition with a reductionist approach to science that impacts society" (p. 43)

Educational planners must carefully consider this conflict, one of their main tasks being to convince educational decision-makers and industry that this conflict is not incompatible and that the two objectives can be balanced.

#### **Classical Approaches of the Economics of Education**

## The Return on Education Approach

Undoubtedly, the most important approach to assessing the contribution of education to the economy is the direct return approach. This methodology, as a tool to guide planners in the optimal production of educational services in relation to investment in education, still has numerous advocates. For many years, however, educational planners and education policy analysts have doubted whether, in the long run, the conception of education as an investment will be an adequate indicator of what should be spent on education.

In what is now considered a classic controversy, Vaizey (1962) wrote that what bothered him about rates of return were the assumptions behind studies of the earnings gap between high school and college graduates. He simply did not agree that there is a causal relationship between education and earnings. The author argued that there are factors that interfere with this relationship:

- ✓ There is a multiple correlation between parents' wealth, their income level and the quality of the educational service accessed.
- ✓ Certain aspects of intelligence are innate.

✓ A good part of the income obtained in the last years of professional life is obtained from institutional adjustments.

Many educational economists are critical when considering marginal revenue, or opportunity cost, in the cost-benefit equation. For example, the determination of national income does not consider the opportunity cost of income forgone by the housewife who works at home instead of outside. On the other hand, if we consider all students who are not in college or high school, this situation should automatically be passed on to the market, the effect of which would be a high level of unemployment and a strong downward pressure on wage rates.

There are unavoidable flaws in using the rate of return as the primary guide to investment in education and these arise from the results that can be obtained from an analysis of national income. For example, while the demand for highly skilled labor has increased dramatically in recent years, it can be argued that if the number of higher education graduates were to increase dramatically, the net result would be a decrease in the return on investment in education. If this were to occur, the effects on higher education graduates would be translated into their having to accept lower paying jobs, or salaries in a position not in accordance with their ability. In the latter case, earnings would not be an accurate measure of the contribution of education to productivity levels.

Perhaps one of the controversial points about the rate of return on education depends on the amount of education that is investment and the amount that is consumption. In this regard, academic research over the past three decades seems to indicate that more educated parents seem to have a different conception of the nature of a college degree and its benefits. These parents perceive higher education primarily as a consumer good and only secondarily as an investment. While the economists of the equation have been clinging to Human Capital Theory by modeling educational investment as a result of studying the rate of return, the attitudes of those members of society who are most likely to send their children to college may be going in the opposite direction.

In the last three decades the discussion regarding the appropriate methodological procedures to effectively measure the economic returns to education has been at the center of the debate, however there is a consensus that to some extent the marginal returns to education are greater than the marginal costs. Marginal returns for an individual student have been shown to decrease somewhere in high school. So if education is considered as an investment, an appropriate economic decision model should compare the gains that arise from educational attainment with a present cost statement that includes opportunity costs.

## The Labor Force Needs Approach

The planning of resource allocation to the educational system is methodologically based on the decomposition of the aggregate economy into clearly separated sectors and on the calculation of economic growth rates for each of them.

The economic productivity growth for each sector is then converted into estimated labor productivity, which allows the derivation of labor force training requirements.

This seems to be a logical sequence but a dilemma remains:

- $\checkmark$  Is the growth rate a real indicator for adjusting labor force supply?
- ✓ Is it accurate to project the labor force first and then deduct the level of investment in education?
- $\checkmark$  Is it possible to identify both the demand and supply curve for a given job?

The above remarks should not be understood as an attack on educational investment planning based on labor force projections. Education investment plans have to be based on some measurable ideas of what the future will look like. The question here is about the assumed forced relationship between educational investment, its productivity and future labor force needs.

Nowadays, it can be observed that the emphasis has shifted away from the purely quantitative labor concept of directing or manipulating human resources, and has turned towards a social demand approach, which attempts to organize human capital through economic market forces.

But now, the planning of resource allocation to the educational system faces another problem: The satisfaction of social demand is much more complex than the satisfaction of labor force.

#### The Need for Microeconomic Analysis

Most of the criticisms against educational planning, investment and educational choices can be corrected by replacing macroeconomic methodology with microeconomic techniques. Cost-benefit analysis, input-output analysis, internal rate-of-return analysis, etc. are more relevant to educational decision making and policy formulation than macroeconomic estimates.

Educational policymakers have long struggled with social, institutional and political factors, recognizing that educational macro-planning efforts are complicated by social imperatives and that, by themselves, they do not always succeed in optimizing outcomes.

## A New Look at the Economics of Education

Although many of the techniques and theories of the conventional neoclassical paradigm remain attractive, their inadequacies in solving important problems in educational planning have led to efforts to overcome these shortcomings, including those of new institutional and radical economists. These research efforts concentrate on providing alternatives and more practical approaches to human capital theory, even though there is general disagreement about how the theory works.

In this regard, we can find ideas such as those mentioned below:

## Importance of Supply and Demand

Easton (1988) argues that human capital theory focuses almost exclusively on labor force supply and in a very individualistic or micro-analytical way on productivity, the returns from labor performance depend on the personal characteristics of workers. By default, it seems to be assumed that labor supply creates its own demand where workers will always find employment and that therefore the skills acquired through the educational process are valuable in themselves.

This approach suggests that human capital theory, in its conventional neoclassical version, is a partial and myopic approach that offers little information on why there is a correlation between human investment (in the form of education) and productivity. Moreover, the theory has mainly focused on the supply side of human capital, with little or no reference to the demand for it. It has failed to recognize that employees jointly play the role of producers of goods, recipients of learning, and creators of labor opportunities. It has been uncritically assumed that education makes employees more productive, but there is no clear indication of exactly what "productive" means.

The case of higher education in Chile shows the above described, "In fact, the model has shown important weaknesses, among which it is worth mentioning: the weakness of the market to achieve balanced development, with equity and timely adaptation to relevant demands; deregulated growth (coverage and institutional platform) with negative social implications; the high indebtedness level of students and their families with private banks; the segmentation of supply for different social sectors; the heterogeneity in the teaching quality; the disarticulation between the different formative levels; the instrumentalization of research and extension; and the loss of an integral view of social and national development that transcends individual interests and responds to the real needs of the country. (Espinoza, 2017, p.94)

## Questioning of Efficiency Models

Another criticism of conventional neoclassical theory is the concept of efficiency. The fact that the world market for goods and services does not exhibit a perfect competitive environment is a serious blow to the efficiency of pricing mechanisms, which theoretically are very useful in guiding the allocation of resources to the educational system. Neither the invisible hand in the private sector, nor the profit analysis in the public sector will result in the social interest.

This argument stands apart from the fact that, even under perfectly competitive market conditions, most benefits or valuations by individuals cannot be properly captured by a monetary value or price: this is a particular problem of educational markets.

#### Socialization

Another challenge to conventional theory is its failure to consider the socializing aspect of education. According to the screening hypothesis, we consider that education levels act as a screen or a certification device to fill job positions without any direct effect on job tasks. Education does not directly influence the productivity of individuals; and therefore the allocation of resources to education is socially inequitable, ".... it is estimated that the emphasis of the human capital theory on the years of schooling does not reveal or demonstrate the quality of education and what is privileged is the completion and the degree attained. In other words, for the productive area, the demonstration of the credential is required to access more privileged jobs and, consequently, better salaries. It is criticized that the educational system is becoming an institution for the delivery of credentials, at the expense of the educational values that are supposed to prevail, due to the importance given by human capital to the number of years of education completed. The main problem arises from the aspiration to improve one's living conditions by obtaining an academic credential, rather than valuing the skills and knowledge developed. Education acquires a verticality, whereby the attainment of the ultimate state of learning is assumed to be the highest of wage expectation. "(Muriel, p.10-11)

#### Labor Market Segmentation

Another issue is the segmentation of the labor market. It is explained that there are two forms of labor market: a first market for large corporations and a second one for small businesses, "The different conditions of the companies, create a distinction in the workers of both sectors, the jobs in the primary sector have high salaries, greater stability, are also identified with higher job qualifications, and therefore, opportunities for advancement within the same companies. The secondary sector is characterized by lower salaries, little stability and scarce opportunities for promotion, as a result of the low qualification of workers and the high turnover of the labor force" (Ramírez, Jurado, Gómez, Núñez & Gutiérrez, p. 42).

As a result of this dichotomy, the functioning of a competitive labor market, on which conventional theory is based, would only apply to the second form. Good jobs will not be allocated to workers regardless of their skills, training and education. Workers, therefore, will not be paid wages based on their additional contribution to productivity. This will result in an inefficient allocation of resources to educate or train the labor force, if such training is not rewarded with specific benefits.

## Undereducation and Overeducation

Undereducation refers primarily to changes in job requirements and work environments that are ignored in formal education. Especially affected are the children of immigrants, racial minorities, single-income families.

On the other hand, overeducation refers to the fact that there is a surplus of educated labor force that is growing faster than the supply of available jobs, especially at the university level.

Although there could be multiple explanations for the phenomena of overeducation and undereducation, their existence is a blow to human capital theory and the assumptions of conventional neoclassical theory.

"From a microeconomic point of view, educational mismatch and qualification mismatch have repeatedly been shown to be determinants of job satisfaction. Available research agrees that over-educated individuals perform less well at work, receive a higher salary in compensation for their higher educational level, and are less satisfied than those who are adequately educated" (Fabra, p.76).

## Social and Economic Changes

Thus, the so-called new approach to the economics of education arises from the empirical manifestation of social and economic changes: Schools cannot be isolated from the social system. As Carnoy and Levin (1985: 109, cf. Dewey 1966) state, schools respond to something much more complex than the labor market,

but rather to the rise of social aspirations combined with the rise of political power. Schools and their classrooms are becoming spaces of struggle where power is tested.

#### **Changes in the Labor Market**

A detailed examination of changes in production and labor markets is a good example of why we have a new guiding approach in economics of education.

After World War II, the product market experienced a massive shift from physical production of goods, such as machines, automobiles and steel, to service-oriented production. As a result, much of what was taught in schools became obsolete. New jobs in the service industries required communication skills, analytical skills, reasoning and other skills that were not being addressed by school programs or the home environment. Acquiring such skills became a necessity to maintain a competitive advantage.

On the other hand, increased competition from newly industrialized countries has forced developed countries to focus on educating their labor force in the adaptation and implementation of technological changes. The increasing demand for more responsibilities and discretionary power of workers, requires the development of problem-solving skills, improved communication, the ability to assimilate and understand information, and the ability to lead and coordinate.

The complexity of current society makes it very difficult for a single theory, such as the human capital theory, to explain the educational phenomenon. Therefore, it is necessary for the economics of education to broaden its scope in order to include many of the other social sciences and management theories.

## FINAL THOUGHTS

Human capital theory has been one of the most influential bodies of theory in the economics of education, in the design and structuring of modern educational systems. This theory generalizes and extends to the explanation of educational phenomena one of the basic principles of neoclassical economics, namely, that the adequate methodology to explain any economic phenomenon necessarily implies its formalization in econometric terms.

Thus, the construction of mathematical models based on the quantitative objectification of concepts such as, in this case, preference, efficiency, equity, labor force, among others, is established as a requirement and ultimate goal of any analysis characterized as objective. However, this methodological premise is based on what we could call an ontological confusion, which consists in the forced adaptation of socioeconomic phenomena to patterns, models and analogies of Newtonian physics, in such a way that it privileges the use of mathematical instruments in its analysis.

The type of reality which is compatible with the use of formal models is very different from the type of realities that characterize the social realm and especially educational phenomena. In other words, there is an inconsistency between the ontology that mathematical models implicitly presuppose and the ontology that actually characterizes social reality. In this sense, the demand for formalization inherent in the Human Capital Theory cuts out important aspects of social reality that are essential for understanding and explaining educational phenomena.

In this context, where education is perceived as an economic or market good and not as a social right, the development of higher education systems in Latin America shows the presence of a segmentation of the educational offer that results in the creation of a growing inequity in the access to quality institutions, to which the better-off sectors have preferential access. The implementation of educational policies based on the foundations of the human capital theory has had a direct impact on the budgets allocated to the higher education sector, which has experienced a significant reduction in favor of the primary or secondary sector. It is argued that this financing model is the most efficient possible given the fact that it appeals to lower fiscal spending and allows for a substantial increase in private investment. However, this budget reduction has negatively and considerably affected the development and projections of the universities, which have been forced to generate resources through different mechanisms that are not related to the mission and vision that gave rise to them.

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