



The role of higher education in economic growth and development

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ABSTRACT

A suitable education system, In particular, higher education is the main prerequisite for the development of any country and the key to keep the country in the line of progress, which has been followed by the developed countries. The purpose of this research, is to investigate the role and position of higher education in economic growth and development. The theoretical basis of this research is based on the theories of human capital, human development and approaches related to investment returns in education. Thus, this article explores and expresses the process of achieving economic development through higher education. This is a library research and is complicated by examining domestic and foreign books and articles. The obtained results indicate that, firstly, increasing the productivity of higher education and making it more practical has a positive and significant effect on growth. Secondly, investing in university education will have a positive effect on economic growth as well. It is clear that in addition to the quantitative and qualitative expansion of the university system, in order to achieve a balanced, comprehensive and fair development, other factors such as infrastructure, the state of the macroeconomic environment, The level of health and education of the country's population, market size, open market, political stability and democracy, productivity of manufactured goods, labor and financial market, technological readiness, political conditions, economic and social stability, absence of corruption, efficient bureaucracy, etc. must be present.

KEYWORDS: Higher Education, Economic Growth, Economic Development, Educational System

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1. INTRODUCTION

Education leads to the accumulation of human capital in the individual and social aspects through the improvement of individual skills, abilities, and competencies. It also expands the scope of freedom of the individual by increasing his abilities. To explain the effect of education on human capital There are two major approaches: the productivity approach and the capability approach (Bartlett and Chase, 2004). In the productivity approach the goal of education is only to increase the productivity of the workforce, but in the capability approach to education, the improvement of the productivity of the human force It is one of the intermediate results and what is most important is the cultural and social improvement caused by education. Who have a more favorable educational system, have been able to achieve sustainable economic growth by using high-tech and knowledge-based products. Based on this, the experience of the two countries of Japan and China in terms of education and educational system can be concluded that the design of a suitable educational system will be the main prerequisite for the development of any country and to put them in the path of progress. (Wals, & Jickling, 2012)

Today, the countries of the world are trying to establish a connection between higher education and national development programs and promotion of knowledge and technology; Therefore, national development policies are fundamentally connected to education. In fact, it can be said that one of the most valuable resources that society has for progress and development is the university. In most developed countries and developing countries, solving problems and meeting the requirements of national goals have been realized in academics level, and today most of the developing countries (the third world countries) believe that the main basis of national development is the rapid quantitative and qualitative expansion of educational opportunities. provided with better quality, national development will take place faster (Bath, et al, 2007)

Higher education, the factor of social and economic mobility and one of the crucial factors influencing the development of societies, is considered more important. The reason for this is the role of higher education, especially in new approaches to economic development. It is because of the fact that in the new approaches, development is an endogenous process that should be based on local and regional abilities and facilities, and higher education has gained significant attention, since it can be productive and use local capacities and capabilities, accelerates and facilitates a region and provides the human and social capital needed to advance development. Therefore, in recent years, in many countries, laws have been enacted

and the arrangements adopted based on which higher education and universities are asked to feel more responsible towards the local community and the surrounding environment and participate in the development programs in a direct and effective way and in the atmosphere of (wakkee, et al 2019)

Higher education plays a fundamental role in all aspects of development in different ways. One of the important roles in this field is the effect of higher education on economic development. According to the theory of human capital, higher education and any kind of skill and training that a person has, creates capacity and capability that can generate more income flow in the future; (Davidson, 2010). Therefore, education and increasing ability and skills is actually an investment that has an economic return like any other physical investments. "Gary Becker" and "Theodore Schultz" point of view of human capital states that the achievement of the heritage of high development in developed countries depends on education and especially the provision of higher education. ; Thus, this article explores and describes the process of achieving economic development through higher education. It should be mentioned that the research method of this research is of library type and by examining domestic and foreign books and articles.

This type of actions haven't been taken in Iran regarding the economic development programs; therefore a specific frame work for universities and centers of higher education in this field has not been formulated. and This fact is confirmed by the fifth five-year plan for the country's development, which in its second chapter (science and technology) and its sixth chapter (development), where the topic is specifically "the higher education and development", there is no request from the higher education department was made, to play an effective role and have a direct participation in regional development programs. Therefore. In this research, the role of higher education in economic development was included in the agenda.

2. Higher education and sustainable development

Today, the focus on economic growth has led to the question of whether sustainable development has been of concern to mankind in past generations. (Hamel and Arguero 2021). sustainable development has been considered as the most important and the biggest challenge of societies in the 21st century, and without a doubt, sustainable development does not have and will not have a concept other than the continuity of life for the future of the human race. Sustainable development is a new concept of scientific development. Sustainable development requires that we change not only the concept of economic development, but also the concept of social development. Urban development as a type of social and economic development is an important embodiment of the process. Sustainable development is defined as meeting the needs of the present generation without jeopardizing the ability of future generations to meet their own needs. "UNESCO" is in charge of the sustainable development program, and The aforementioned program has four economic, socio-cultural, ecological and environmental dimensions, and about thirty-three categories, some of which include proper governance, gender equality, peace, human rights, access to education ,anti-narcotics actions, and preservation of cultural heritage ,the traditional and indigenous knowledge of urbanization, poverty and security, food, climate change, natural disasters and many other things. the purpose of education for sustainable development is to empower people and society to understand and taking the responsibility of creating sustainable futures (UNESCO, 2014)

3.The role and position of higher education in economic growth and development

Development is a multi-dimensional process that includes major changes in the collective structures of national institutions, as well as an increase in the growth rate and reduce inequality and eradicate poverty (todaro et al., 2012) it is a common belief among all countries that Achieving economic growth and development is possible only through the acquisition of new knowledge and new ideas, which can be reached through fundamental and developmental applied research at different levels. Higher education, by combining education and research, can have an effective role in improving the knowledge of countries; as far as it is considered as the engine of development of 15 countries in the current era (Castell 1994) higher education can have an effect on economic growth in at least three ways :

- 1- Accumulation of skills and abilities
2. Production of new knowledge through invention and innovation
3. Speeding up the acquisition of advanced technologies;

The capacity of the workforce determines the country's ability to create growth and wealth. In the second half of the 20th century, in the literature related to the theories of economic development, a change in focus from the accumulation of physical capital to the need to invest in human capital is observed, which shows the importance of education and its various forms as a prerequisite for growth and coping with the challenges that They were facing it at that time; such as brain drain from third world countries or from the

private sector to the public sector and many others. One of the first writers who talked about the importance of human capital was Theodore Schultz (Biddle & Holden, 2017).

In the field of examining the importance of education in the process of economic development, the three approaches of human capital, human development and return on investment in education are important and are used as a theoretical framework to examine the interdependence of education and development or to analyze the increasing importance of education in the development process. Each is described separately.

4. Education approaches in the process of economic development Human capital

Human capital refers to the stock of knowledge, skills, competence, abilities and other characteristics that are mainly acquired through education and have a positive effect on productivity and work quality. According to the managerial approach, human capital is a business resource or asset that is formed from the market value. From the point of view of macroeconomics, human capital is one of the main factors of production; so, in the literature of economic growth, the concept of human capital is closely linked with the development of economic knowledge.

The concepts of human capital and investment in education are more than four decades old. In addition to Schultz, other researchers such as Becker, Hansen, Minser and others have presented their views in this field. In general, the emergence of the theory of human capital was a turning point in examining the importance of education in the real economy; However, it was the works of Amartya Sen which indicated the importance of education as a component of social movements and changes. (Osmanković et al., 2011). In general, the literature related to the theory of human capital is divided into two categories:

- . Literature related to the measurement of human capital and education using the cost approach. This approach was used by Schultz, Kendrick 1 and Isner in research.
- . Literature related to the measurement of human capital and education using the income approach. This approach was dominant in the works of Jorgenson and 2 Frayomeni.

Schultz and Denison have analyzed education in the context of "excess of solo" which is defined as the result of advancement of technology; considering the fact that the inequality of the level of development can be explained through human capital. They showed that education directly affects the growth of national income by increasing the knowledge, skills and overall capacity of the workforce. According to Schultz, human capital is a "commodity" that its value depend on 5 categories of investment in people: 1. health, including nutrition, 2. immigration which increases the job opportunities, 3. job training or on-the-job training; 4. formal education program; 5. Study programs for adults. Schultz believes that people are the wealth of nations and investing in human capital is the best explanation for the difference in national production. Schultz believes that human capital is wasted due to its excess (for example, unemployment). Unemployment is formed due to the mismatch between labor supply and demand and the mismatch between the labor market and education policy.

On the other hand, in the works of Becker and Minser, human capital is analyzed from the perspective of the role of education in increasing income, i.e. increasing opportunities for personal benefits. In his model entitled "learning by practicing", Aro expressed the hypothesis that in emerging industries, the profitability of any economic enterprise depends on the accumulated experience in the industry, which means that such accumulation means that market forces will lead to optimal investment; In other words, the assumption of most authors in the analysis of Hummels & Argyrou, (between education and development) is that knowledge is a public good with important side effects (2021)

While in Solow's model of economic growth, technological progress was the source of growth, Lucas argued that another source of growth is the accumulation of human capital. The two main sources of human capital accumulation in Lucas's approach were: education and learning by doing. Lucas also emphasized the importance of side effects and their importance in education. The contribution of Nelson and Phillips in the theory of human capital is summarized in the proposition that growth originates from the stock of human capital and this affects the country's ability to create innovation and makes them reach the level of developed countries. The difference in the growth rate is primarily the result of the difference in human capital reserves and the ability of countries to shape technological advances. They also believed that education helps people to discover and present new products and ideas elsewhere. Pack (1994) tried to identify the roots of international differences in productivity. In his review, Education was recognized as one of the most important sources; however, if new knowledge is not imported from abroad or if domestic productivity does not increase significantly, the efficiency of education will be lower; in fact, as Lucas stated, the negative effects of the level of education occurs when new technologies are introduced quickly.

The main weakness of human capital theory is ignoring the need to empower people, especially their participation in the development process. Empowerment of people through income, education and health has not been analyzed in human capital theory; But later it became a part of Amartya Sen's approach to human development (Osmanković et al., 2011: 71).

Human development

Amartya Sen, the founder of human development theory, along with Mahboobul Haq, had an interesting contribution in popularizing the human development approach, expanding the human development index and generally popularizing the United Nations Development Program. The main components of human development are: equality, sustainability, productivity, empowerment and cultural pluralism. The theory of human development tries to create an optimal model of the combination of human, institutional and social capital to create the greatest possible benefits for the individual in ways that Sen calls the welfare state. (Osmanković et al., 2011);

In terms of age, the implementation of human development policy has two direct and indirect effects. Its direct effect is on the quality of people's lives by increasing literacy, health and life expectancy, even if it does not cause economic development and industrial development. The second effect is not through the increase of educational and health facilities; Rather, it is through economic development; That is, Huaruo facilitates industrial growth, improves efficiency, and all these factors are effective in improving the quality of life (et al, 2020).

This theory is not the only economic theory; Rather, it needs an interdisciplinary approach from the perspective of health, environment, gender issues, social justice, sustainability, etc. The theory of human development is a comprehensive approach and focuses on all aspects of the development process. The following table shows a comparative analysis of the role and importance of people in three important theoretical approaches in economic development studies. Based on this table, it can be seen how the role of people (human capital) has evolved in theoretical approaches and measurement methods have changed in different ways.

Table 1-The approach of human development

The approach of human development	The theory of human capital	The theory of economic growth	
development is the real wealth of the country	factor of production and development (intelligence , Health and knowledge) work is at the center of a concept called knowledge based economy.		The role of the people
Creating an environment where people can increase their potential and creativity according to their interests and needs and have more choices.	Increasing productivity and sustainable economic growth as a result of the knowledge and education process of the working age population	to improve living conditions	The ultimate goal is
HDI, IHDI, MPI, GEM	Investment return and investment Efficiency	GDP growth	How to measure

Investment in education

World Bank studies have shown that investing in human capital in higher education has economic returns, and statistical evidence in some countries of the world has shown that the social return on investment in this sector is high, and this has led to more investments in this sector. It is interesting to note that the rate of return evaluates only the economic benefits resulting from higher education; While universities are creators of many individual and social values that cannot be reduced to money, investing in education gives people the ability to increase their future income . In the economy which is based on information of the 21st century, education has increasing importance. Investing in education helps to increase labor productivity and enables people to become efficient workers, citizens and better parents (Lozano et al, 2015). In contemporary theory, in addition to the term “economy of knowledge”, most of the time the term "Knowledge Capitalism" is mentioned as well. This term refers to the many positive effects of knowledge dissemination on well-being, general economic situation, health, etc. The importance of education and educational policy is largely reflected in the fact that education constitutes knowledge that is the basis of the process of industrialization, introduction of new technologies, innovation, etc. As Romer said, a knowledge-based economy will create knowledge and, accordingly, quickly acquire newer knowledge and products. Romer published the first experimental study in 1981. The same author completed a follow-up study in 1973 on the return on investment in education in a year of analysis of thirteen other countries. According to Sakharopoulos, the literature related to the analysis of investment return in education is divided into two waves: (Vare et al, 2019)

The first wave; an analysis which was started with Schultz and becker and continues until today, which is described in terms of nature.

The second wave: analysis based on quantification and measurement of investment returns and increasing income and gains from investing in education. with the publication of Mincer's book by the National Research Office in 1973, this wave was promoted. The turning point of this wave was at the beginning of the 1970s.

Investing in education, like any other investment, has its own benefits and costs. It is very important to use the right method to analyze the benefits and costs of education. Regardless of whether costs or benefits are analyzed or not, the costs and benefits of both aspects and both concepts can be understood from the perspective of the individual and social aspects. In the table 2, their mutual relations have been investigated.) Waas, & Hugé,. 2015

Table 2-Social and individual

Social	individual	
Public subsidies	direct expenses (including tuition)	Costs
Spillover effects on labor productivity (When the training of one person make her colleagues to be more productive	lost production (income or other productions)	
Increasing technological facilities	Increase productivity in the market	
Non market effects (more social justice, more cohesion in the society, a strong sense of national identity, decreasing population growth, reducing environmental stress, reducing the risk of contracting infectious diseases and reducing the crime rate	Private effects other than the market (Better personal health, increased capacity for enjoyment, relaxation, increased workplace efficiency and other personal choices)	Advantages

The approach of the Economic Cooperation and Development Organization is based on the social consequences of investment in education through health and civil and social participation. According to this approach, increasing the years of education does not by default mean an increase in civic and social participation or health; Rather, it depends on the quality of education, schools, work methods, usefulness of knowledge, acquired skills, etc. The analysis provided by this approach is especially important for analyzing the social importance of Education or the social return of investing in education.

5. Discussion and conclusion

Considering the unique role of higher education in training skilled and creative human resources, today, not only developed countries, but also many developing countries, are trying , to accelerate their growth and development process by allocating a significant share of their GDP to education and improving its quality. The obtained results show that, firstly, Increasing the productivity of Iran's higher education has a positive and significant effect on economic growth. Secondly, investing in university education will have a positive effect on economic growth. It is clear that to reach A balanced and inclusive and fair development, in addition to the quantitative and qualitative expansion of the university system, other factors are important to. Other factors such as infrastructure, macroeconomic environment, health and education level of the country's population, market size, open market, political stability and democracy, yield of manufactured goods, labor and financial market, technological readiness, political conditions, stability economic and social, the absence of corruption, efficient bureaucracy, etc.

In other words, in a stable political, social and economic environment, the growth and effectiveness of scientific institutions is possible; Therefore, for economic development, it is not possible to emphasize on only one aspect such as university and higher education with high accessibility, qualitative and egalitarian and ignore other institutions such as family, health, etc.; Therefore, development should be comprehensive and include all levels. Therefore, it seems that the adoption of long-term policies in comparison with short-term policies in this field will be more successful for higher education to be influencing in economic growth. In addition, today, with the introduction of a concept called knowledge-based economy, which is based on the production, distribution and use of knowledge, the difference in the growth rate of countries is more caused by the difference in the level of dynamism of the countries' higher education system and their scientific development rather than the amount of natural resources and endowments and Industrial capacities they own. The first step in realizing a knowledge-based economy is investing in human resources, and in this sense, higher education and specifically universities, as the main focus of thinking, production, science of creativity and innovation, and the training of skilled and expert workforce, who make up the human capital of a country, have a serious mission.

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ETHICAL CONSIDERATION

Authenticity of the texts, honesty and fidelity has been observed.

CONFLICT OF INTEREST

Author/s confirmed no conflict of interest.