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8. Impact of ICT on Education Social and Economic Development

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Abstract:

Two kinds of participants in the educational process have been identified by the study: those who supply educational services (teachers, professors at universities and other educational institutions, trainers, consultants), and those who receive educational services. The way goods and services are manufactured, delivered, sold, and purchased is drastically altering as a result of the Internet. It results in an ever-increasing number of individuals and organizations being digitally linked and prepared to participate in and contribute to the knowledge economy. The importance of information and communication technologies (ICT) as a catalyst for widespread social and economic development is starting to be emphasized by the international development community. This has sparked initiatives to use ICT to accomplish a range of development goals, including poverty reduction, expanding access to government services, extending health care, and expanding educational opportunities.

ICT has the ability to have an impact on a variety of societal and economic activities, including GDP growth, employment, productivity, eradicating poverty, improving quality of life, and improving education and healthcare. Although the literature offers a wide range of socioeconomic development definitions and components, it tends to concentrate on theoretical conceptualizations from many disciplines and the effects of isolated individual projects.

The effect of ICT on socio-economic development, in particular, has not been thoroughly investigated from the perspective of the ultimate stakeholder, the citizens of a country, who are the technology's final customers. By emphasizing the perspective of the general public in characterizing ICT-driven socio-economic development in a developing nation, this study closes this gap. The mounting obstacles and issues brought on by the expanding usage of ICT in the sphere of education under pandemic conditions are highlighted. It is acknowledged that it is critical to research the socioeconomic implications of implementing ICTs in the delivery of educational services while subject to quarantine constraints. The identification of social factors of the activation of ICT use in education has been done using the example of Ukraine, and it has been found that there are notable differences in terms of gender, age, and geographic features. We shall talk about the impact of ICT on economic, social, and educational development in this essay.

Keywords:

Social, Economic, Development, Educational, Institutions, Trainers, Information, Communication, Technologies, Government, Services, Growth.

8.1 Introduction:

The goal of this study is to undertake a theoretical analysis of the contribution of ICT and education to economic development and progress. The relevance of education, globalization, and human and social capital across time are the main topics of the first study. The effects and opportunities that ICT has on the educational process have been studied.

The expansion of education's economic production and its contribution to the inventory of human and social capital were then underlined. The effects of the rise in educational production on the expansion of human and social capital and, ultimately, the improvement brought about by all these elements on economic growth and development, were then thoroughly explored on a theoretical basis. [1]

8.2 Importance of Education:

The foundation of education is scientific humanism, which emphasizes the application of scientific and technology advancements to develop democracy and the welfare of people. Education for Scientific Humanism is worth reading since it places a strong emphasis on personal choice and advantages, in contrast to many following pronouncements.

The following is a summary of the generally recognized findings that emerged from many research on the economies of emerging nations about the impact of learning and education on the economy: [2]

- While the rate of return decreases while funds are being invested in the learning and educational process, as a result of the process's success, the rate of return rises across all relevant countries as well as in the various regions of those countries.
- • In developing nations when there is a shortage of trained labor, primary education is the degree of education that provides the best rate of return.
- • To raise the level of skilled labor, developing countries invest "between" 1.4% and 10.4% of their national income in learning and education.
- • In industries where competent workers are in high demand, possibilities for on-the-job training result in lower labor costs due to the improvement of the learning experience; thus, the growth of efficiency. On the other hand, from the perspective of the employees, on-the-job training offers chances for faster compensation rises.

Technology advances at the same time as skilled labor becomes more productive. The capacity of individuals to create and use knowledge by using physical capital is enhanced by investments in training and education in the areas that are needed by the sectors operating in the economy. In this way, the new inputs are both harmonized and used effectively, and the efficiency is increased in all sectors. [3]

8.3 Educational Development:

The process of education, which lasts a lifetime, starts at birth and continues until death, or from "cradle to grave." Continuous instruction and training are passed down from parent to kid, teacher to student, student to student, and obviously from the environment to the learner. Knowledge acquisition and skill development are the core components of education. An important component of the development process itself is societal change, which is something that education as a topic of study addresses as well as the method of instruction delivery. In other words, it focuses on a person's ability to stand on his own and make decisions autonomously, as well as how well he integrates into his community, supports his socio-cultural ideals, and contributes to the growth of his local environment. [4]

8.4 Social Transformation:

Should society remain imprisoned by its traditions and customs or embrace the global information technology revolution that has swept through all countries in the previous 25 years? There is a pressing need for societal change in order to put this subject in the proper perspective. [5]

Therefore, social change can be effectively characterized as the tidal waves that altered social patterns, customs, and values, as well as political and economic interactions, and had an impact on local communities and the experience of the country. According to this notion, technology has made the entire universe into a global village, speeding up the rate at which people and goods move across nations. When this occurs, a certain area or feature of society can be easily changed. Social transformation is a synonym for social change; it is a change made for improved quality of life, which denotes development, progress, or modernization. Values, beliefs, and religion can all be reflected in social transformation. It can also reflect on material conventions such as family, transportation, and constructed environments (architecture, planning), as well as material behaviors such as technology.

The foundation of a country's development is thought to be education. Therefore, education is the key to transforming society; self-realization is possible through education if there is proper and effective integration of the individual into society through a process of socialization that is specifically tailored to the individual; developing economic, political, scientific, cultural, and technological processes. Education serves as a change agent in a society where the only thing that is constant is change, thus it must be welcomed by everybody. In this contemporary, sophisticated, and industrialized society, education plays a crucial social function by acting as a catalyst for social development and transformation.

It serves as both a catalyst and an engine for development. When educators from around the world convened in Thailand in 1990 for a conference titled "Education for All," they did so as a result of realizing the value of education for development. Nigeria was one of the countries that signed the proclamation for the abolition of illiteracy. Numerous connections exist between ICT and education, which have been amply shown in the

world's affluent nations. ICT has been incorporated into a variety of learning settings, including formal, informal, and non-formal education. [6] In industrialized cultures, for instance, a large number of individuals have access to ICT devices, which they use to obtain a lot of information that affects them or influences their decision-making. In industrialized nations, ICT is employed in formal education to get good results. In the United Kingdom (UK), instructors are now better able to highlight the practical application of mathematics than ever before because to the use of microcomputers in the classroom. Due to the development of information, communication, and technology (ICT), remote education programs have become a widely accepted alternative form of education in non-formal education. [6] In industrialized cultures, for instance, a large number of individuals have access to ICT devices, which they use to obtain a lot of information that affects them or influences their decision-making. In industrialized nations, ICT is employed in formal education to get good results.

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8.5 Key themes in ICTs for inclusive Social and Economic Development:

There are various opinions on the effects of these changes in the acceptance and usage of ICTs on social and economic growth, as was mentioned in the first section of this introduction. The larger development community does not yet share the ICT/ICT4D professionals' enthusiasm and confidence in the development potential of ICTs, which was forcefully stated at WSIS. The remainder of this section of the article presents eight topics in discussions of the influence that ICTs have had on development policy and practice. It also reviews opinions on that impact. ICTs are multipurpose technologies, which means that their value and influence come primarily from their use in various economic and social spheres. For the development of the economy and society, three qualities are particularly crucial. ICTs:

- enable greater efficiency in economic and social processes;
- enhance the effectiveness of cooperation between different stakeholders; and
- increase the volume and range of information available to people, businesses and governments. [8]

Information and Communication Technology (ICT) Function Education IT has been renamed to information communication technology (ICT). It offers telecommunications access to information and is modern and interactive. Over the past few decades, it has given humanity a wide range of communication skills and transformed society into a global village. Through unified communications and the incorporation of telecommunications, computers, the internet, software, middleware, storage, wireless network, telephone, instant messaging, audio, video conferencing, social networking (Facebook), voice over IP (VoIP), and other media, it emphasizes the function of smart building management systems.

Processing, extracting, editing, sending, and receiving digital data are all included. Through a variety of technical instruments and services, ICT effectively and efficiently manages knowledge and discreetly helps to the growth and development of society. ICT is acknowledged as a change catalyst on a global scale and has the ability to have an impact on all facets of society. It altered the working environment, working conditions, business, entertainment, handling information, exchanging information, education, teaching methodologies, learning approaches, scientific research, and how people obtain information.

A. ICT in teaching and learning:

ICT in education refers to simply using ICT for instruction and learning. It has developed into a crucial component of the educational system. This plays a crucial role in the educational system. It has gradually changed the world from a scholastic to a knowledge-based society, and as a result, the economy has changed into a knowledge-based economy, helping to boost wealth creation across nations. This is a novel and all-encompassing approach to technology that has a big impact on the educational system. It has improved productivity, altered the entire design and operation of the educational system, and altered its governance. It has also brought about qualitative changes.

It has made, is making, and will continue to make a significant contribution to the improvement of education. It is also a universal truth that instructors cannot be replaced by technology since they are an essential component of effective instruction and without them, technology cannot work. Only the technology, way, method, and mode of instruction may be altered, amended, and improved. All educational participants were compelled to think futuristically as a result of these new ICT advances, and educational institutions, administration, and teachers had to choose their own responsibilities, strategies, and goals as a result. [9]

B. ICT and Social Work Ethics:

ICT has an impact on social workers' careers. Social workers that work with clients are even reliant on ICT. Social workers must focus on the changes made to the infrastructure and health care system as well as how clients use technology because there have been so many technical advancements across all disciplines. Social workers should be knowledgeable about ICT if they want to make a difference in society by taking action, especially if they have to cooperate with other professionals from different disciplines who strategize and use ICT. [10]

Even the workplace environment and social dynamics have changed as a result of the use of ICT. The use of ICT will increase as networking continues to develop and become more complicated. ICT is necessary for social worker training, providing social work services to the underprivileged, and even for social work research. Effective usage of ICT will benefit a large number of individuals.

ICT unquestionably plays a significant part in the human relationships that social workers focus on. The majority of individuals use ICT in one way or another, including social

networking sites like Facebook, SMS text messages, and electronic messages (email). Instant messaging services or video chats, such as Skype, are further examples. The importance of ICT for their customers must be understood by social workers.

The communication techniques used in face-to-face and online interactions differ from one another, but social workers must be aware of this. Relationships today are formed online. The organizations that share a goal unite; many of them receive education online; others receive social support; etc. Even the names electronic groups, forums, or mail groups are used to describe them. Both beneficial and negative effects of ICT exist, including cyberbullying. Social workers should place more of an emphasis on relationships that take place online rather than only in person. [11]

ICT is employed as a social development instrument. In villages, farmers use smart cards for a variety of transactions. Client credit history is stored on the smart card. NGOs use ICT as a platform to raise awareness about issues such as sanitation, early childhood development, and HIV/AIDS. NGO's also address issues of gender inequality by emphasizing the empowerment of women through ICT. To boost their confidence, even local women are taught the fundamentals of computing.

ICT is crucial in raising public knowledge about AIDS and sexual education. The public can easily access knowledge online.

C. ICT for Social Change:

ICT can be employed to effect social change. To advance their cause, people can build websites, Web pages, and blogs. For instance, the Women's Learning Partnership website connects the use of ICT to end women's marginalization.

Women are given access to technical skills through training and a variety of activities to support gender equity and human rights. ICT is the only medium that raises people's awareness of social issues and allows them the chance to participate in social change initiatives like the fight against cyberbullying, the advancement of feminism, the elimination of slavery, or the industrial revolution. [12]

Draw conclusions from the research on economic, social, and educational development, as well as from case studies, to present the possible outcomes of such a matrix-filling exercise in Table 8.1.

Consider the scenario where a lower middle-income nation assembled a high-level cross-ministry, cross-sector commission to assess the current economic and social condition and create a 15-year development plan for the future.

They pinpointed specific advantages, issues, and trends in their investigation. They were encouraged by the country's slow but steady economic growth over the past ten years, which was mostly driven by the eco-tourism sector and a developing light manufacturing sector that produces consumer items and small appliances for a middle class that is itself modest but growing.

As a result of its shared linguistic and cultural heritage, the nation also boasts a sizable, though traditional, film industry as well as a thriving entertainment sector. [13]

Table 8.1: Examples of the relationships between Growth Factors and Types of Development

Growth Factors	Types of Development			
	Economic Development	**Social Development**	**Educational Development**	**Educational ICT**
Deepening of Physical Capital	Target tourism, light industry, entertainment, and agriculture. Extend ICT infrastructure and support the deepening of private capital.	Target rural areas; build community technology centers; support private acquisition of ICT; facilitate Internet cafes.	Build and modernize school facilities, particularly in rural areas. Community technology centers in rural areas.	Invest broadly in school ICT equipment and networking but particularly at the secondary level and in rural areas.
Improvement of Human Capital	Upgrade labor; develop technology use, application, and production skills.	Strengthen education and social services, particularly employment transition and community development in rural areas.	Focus curriculum and pedagogy on understanding, real world problem solving and creativity. Include technology skills. Upgrade teachers' content, pedagogical, and technological knowledge.	Develop students' skills in using ICT to solve real world problems. Develop teachers' ability to integrate ICT into the curriculum.
Knowledge Creation and Technological Innovation	Strengthen intellectual property laws. Support of invention of new products and services in targeted clusters; research in agriculture.	Increase knowledge and best practices information on education, adult literacy, and modern farming practices.	Increase pedagogical knowledge and best practices on teaching for understanding and problem solving and on technology use.	Collect best practices on the application of ICT for understanding, complex problem solving, and the production of creative products.
Organizational Networking and Knowledge Sharing	Develop participation of SMEs in light industry, tourism, entertainment, and agriculture. Support networking between urban, rural, and regional resources and markets. Expand agricultural extension services.	Develop community knowledge sharing and collaboration; open government and education organizations to community and parent participation.	Decentralize decision making; foster teacher professional development communities and knowledge sharing, particularly between urban and rural schools.	Use of ICT to support communication, collaboration and knowledge sharing by students and teachers. Assess impact of ICT on learning.
Monitoring and Evaluation	Monitor effectiveness of government policies on key economic indicators.	Monitor effectiveness of government policies on social equity indicators; obtain community feedback.	Monitor indicators of high-level student learning; assess application of knowledge to solve problems.	Use ICT to support school effectiveness and efficiency; use ICT in assessment.

Their expanding light manufacturing sector somewhat offsets a sharp drop in the heavily government supported heavy manufacturing sector. The two largest cities in the nation are home to the majority of these economic resources. Although their corporate offices are in cities, ecotourism is located in distant places.

Due to a sizable population that is largely illiterate and depends on outdated farming practices, there are considerable discrepancies in the distribution of income and social conditions.

The group reached agreement on a future vision for the nation based on this analysis, one in which the development of physical and human capital would promote sustained economic growth and the eradication of social disparities.

The end result of their analysis and planning is the filled-in matrix in Table 8.1. The table demonstrates the commission's hypothetical decision to prioritize agriculture modernization and the growth of three industrial clusters.

Specifically in the sectors of tourism, light industry, entertainment, and agriculture, the plan would put into place policies that support the development of physical and human resources.

Public funds would be heavily invested in rural development, innovative capability, and education. For displaced heavy industry workers, shorter-term expenditures in training and unemployment benefits would be given to aid in their transfer to designated industries. Policies would promote both public and private investment in the ICT infrastructure, which is related to physical capital.

The privatization of telecommunications and the elimination of government support for the increasingly uncompetitive heavy industry would be used to finance public investments in the development plan. [14]

ICT is now a significant component of the economy. Computers and Internet connections are used by almost all businesses and individuals for financial activities like selling goods and services, enhancing product quality, and giving customers access to a wider variety of products. Evidently, throughout the past 20 years, there has been a rapid expansion of ICT and its effects on economic growth in both developed and developing nations.

Despite the recent global economic crisis, ICT use indicators show an increasing trend. Country data on computer, cell phone, and Internet users, however, show varying ICT diffusion rates across nations and regions (Figure 8.1).

For instance, the continual increase in mobile cellular subscriptions is apparent; by the end of 2009, there were 67 subscriptions for every 100 people worldwide. This demonstrates that despite having limited resources, consumers are still prepared to spend some of their disposable income on mobile services. [15]

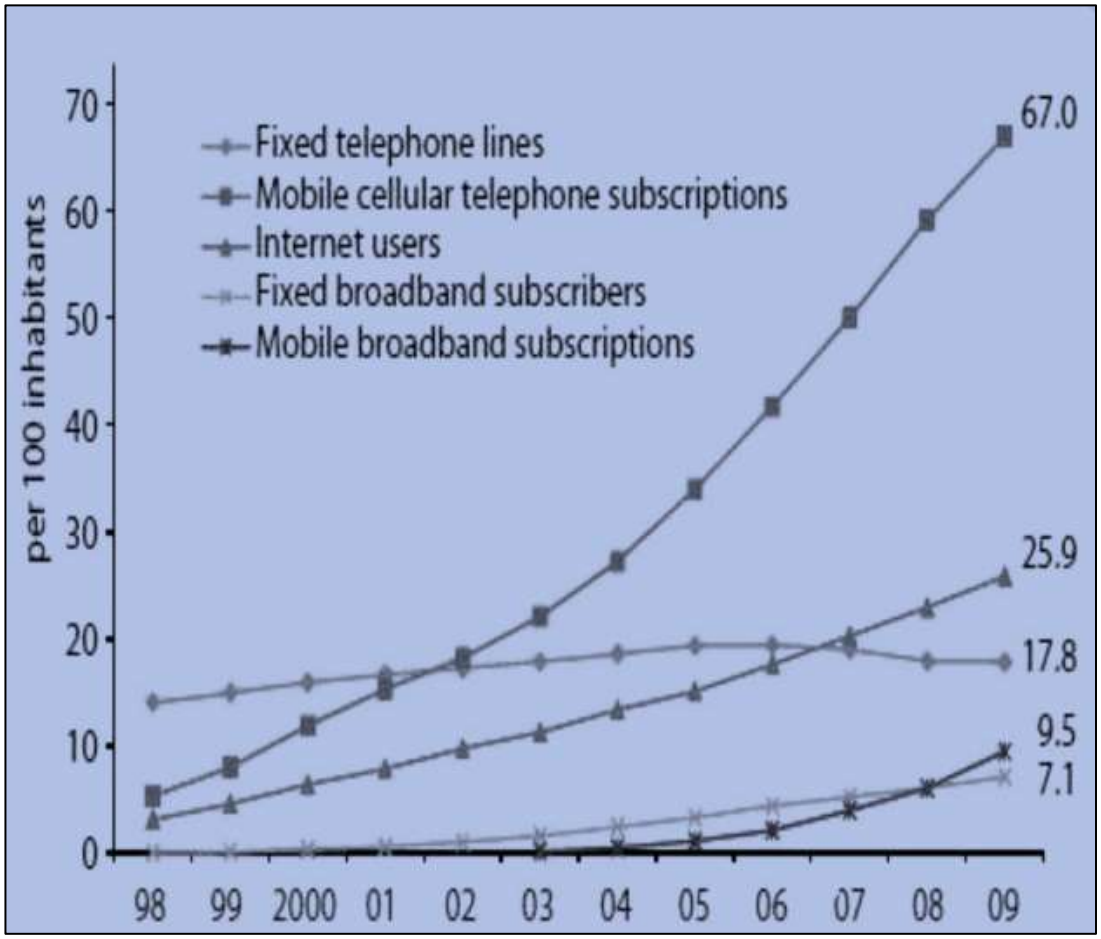

Figure 8.1: Global ICT Developments, 1998–2009.

In addition, many growth economists have been interested in the productivity boom that occurred in the late 1990s and early 2000s. ICT is currently regarded as the industrial society's main engine of economic growth and serves as a symbol of the technological revolution. The definition of ICT is the most crucial factor in determining how much ICT contributes to economic growth.

ICT is defined as a notion that encompasses computers, peripheral equipment, and other information-related office equipment (photocopiers, cash registers, calculators), as well as computer software. It also includes communications equipment and instruments. [16]

8.6 Conclusion:

Globalization serves as a background for studying economic and social transformation. It is thought that the global economy and education are interconnected. While the objectives of education are dependent on the economy, the quality of education is a factor in global economic competition. In these conditions, education evolves together with changing economic demands. This study investigated how common people in a developing country

see the idea of ICT-driven socio-economic growth. Although many authors and commentators have expressed their own opinions about socioeconomic growth, the "people's" perspective is of utmost importance and cannot be disregarded because it has the greatest impact on their daily lives. Our study adds a number of things. To begin, we developed a theoretical model of how ICT affects socioeconomic development. It is impossible to undervalue the role of education as a fundamental tool for modernisation and social change. The quality of education in a community determines its level of growth, so for a country to be on par with others, it must give citizen education substantial consideration. To fully benefit from the advantages of ICT, people must be literate.

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