

PEDAGOGIES FOR SUSTAINABILITY: EMPOWERING COMMUNITIES THROUGH STRATEGIC EDUCATION

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Abstract

In the context of global environmental, social and economic challenges, education is becoming a key tool for developing sustainable thinking and responsible behavior in new generations. This paper analyzes modern educational strategies aimed at supporting the sustainable development of society. The conceptual foundations of Education for Sustainable Development (ESD) are considered, including an interdisciplinary approach, development of environmental awareness and formation of values of social justice. Particular attention is paid to the role of educational institutions, public policy and international initiatives in integrating sustainability principles into curricula. Examples of successful practices at the level of schools, universities and additional education are given, demonstrating the influence of educational strategies on the formation of sustainable communities. The work is of interest to teachers, developers of educational programs, specialists in the field of sustainable development and government agencies dealing with education and ecology.

Keywords: Education for sustainable development, sustainable development, educational strategies, environmental education, interdisciplinary learning

I. Introduction

The relationship between the human factor and economic growth has garnered increasing attention, particularly in the context of sustainable development. Human capital—encompassing education, skills, health, and social capital—plays a pivotal role in determining a region's or country's ability to achieve economic growth while maintaining ecological balance and social equity. In an era where environmental concerns and social inequalities are at the forefront of global discourse, understanding how human factors contribute to sustainable development is essential.

Regions and countries that prioritize the development of human capital tend to experience more robust economic growth. A skilled and educated workforce not only drives innovation and productivity but also fosters adaptability in response to environmental changes and economic fluctuations. Moreover, the integration of sustainable practices into economic activities hinges on the willingness and ability of individuals and communities to embrace and implement these practices.

The influence of the human factor on economic growth manifests through various channels. First, education equips individuals with the necessary skills to engage in higher-value economic

activities, leading to increased productivity. Second, health and well-being contribute to a more capable workforce, reducing absenteeism and enhancing performance. Third, social capital—characterized by networks, trust, and norms—facilitates collaboration and the sharing of knowledge, further driving innovation and growth.

However, the interplay between the human factor and sustainable development is not without challenges. Issues such as inequality in access to education and healthcare, migration, and demographic changes can hinder the potential benefits of human capital. Therefore, policies aimed at fostering human capital must also consider social inclusivity and environmental sustainability to create a holistic approach to economic growth.

In summary, recognizing and leveraging the human factor is critical for achieving sustainable economic growth. By investing in education, health, and social cohesion, regions and countries can enhance their resilience and adaptability, paving the way for a more sustainable future. This paper will explore the various dimensions of the human factor, its impact on economic growth, and the implications for sustainable development, providing a comprehensive understanding of this crucial relationship.

II. Methods

The study of the influence of the human factor on the economic growth of regions and countries in the context of sustainable development requires a comprehensive and interdisciplinary approach. The main methods used to study this problem are presented below.

1. Econometric modeling

One of the most common methods is econometric modeling, which allows you to assess the impact of various factors on economic growth. In the context of the human factor, models can be used that include the following variables:

- Education level.

- Life expectancy.

- Workforce skill level.

- Human Development Index (HDI).

- Fertility and mortality rates.

Econometric methods such as regressions, time series, and panel data help identify the relationship between human capital and economic growth.

2. Qualitative methods (interviews, focus groups)

Qualitative methods can be used to obtain in-depth data on the impact of the human factor on economic development. Interviews with experts in the field of economics, education, employment, or sustainable development provide information on practical aspects and barriers. Focus groups help to identify the opinions and expectations of different social groups.

3. Analysis of human capital indicators

Using human capital indicators such as:

- Human Development Index (HDI).

- Education index.

- Gender equality index.

- Income distribution.

Comparison of these indices with indicators of economic growth of a region or country allows for a detailed analysis of the relationship between human capital development and economic efficiency.

III. Results

The state may possess natural, technological, and financial resources, but all of this is

insignificant without a highly qualified workforce and a high level of human development. In today's rapidly changing world, the importance of human capital is continually increasing. "In the era of digitalization and transformation of production processes, human capital is becoming the foundation for the development of the economy of any country" [12].

In a broad sense, human capital encompasses the abilities, knowledge, skills, intellect, and health of individuals utilized in production processes and to generate income for families and the nation as a whole.

The following types of human capital are identified in the economy:

1. **National human capital** refers to a portion of national wealth that includes intellectual, physical, and labor capabilities that aid in the economic development of the country.
2. **Organizational human capital** consists of the knowledge, skills, intellectual and professional abilities, as well as the physical and psychological well-being of personnel, utilized to achieve high performance in a specific organization.
3. **Individual human capital** comprises the knowledge, skills, health, and abilities of an individual that affect their standard of living and income.

The human capital of each country can be measured. Since 2018, the World Bank (WB) has been compiling the Human Capital Index (HCI) rankings by country. The HCI can help countries analyze problem areas in their socio-economic policies and assess their readiness to transition to a sustainable development model based on the growth of human capital.

The HCI is calculated based on three components:

- Survival;
- School life expectancy adjusted for learning outcomes;
- Health status.

The United Nations (UN) employs a different indicator to assess human development—the Human Development Index (HDI), which is a composite measure reflecting an individual's ability to lead a long and healthy life, gain knowledge, and achieve a decent standard of living.

The following factors are considered when calculating the index: health and longevity, access to education, and a decent standard of living.

The index categorizes countries into four groups based on their level of human development:

- Very high value—an index of at least 0.800;
- High value—an index of 0.700-0.799;
- Medium value—an index of 0.550-0.699;
- Low value—an index below 0.550.

In 2020, the HCI included data on health and education from 174 countries, representing 98% of the global population. According to the World Bank, Russia ranks 41st in the world HCI rankings, with an index of 0.68, or 68%. This indicates that a child born in Russia today can achieve 68% of the productivity of an adult with complete education and good health in the future. For instance, Russia's education indicators surpass those of many higher-income countries, but its health indicators fall short of the global average. The top-ranked countries in the index are Singapore (88%), Hong Kong (81%), and Japan (80%).

Furthermore, as demonstrated in other research, there is a strong positive correlation between subjective well-being (SWB) and the Environmental Protection Indicator (which covers a wide range of issues such as biodiversity, ecosystems, climate, energy, air and water pollution, agriculture, and sanitation). These findings suggest that well-being is linked to the long-term outcomes of environmental policies, even if it is not necessarily positively correlated with the short-term efforts required by these policies.

The challenge for policymakers is to overcome short-term trade-offs by decoupling improvements in human well-being from the consumption of natural resources and greenhouse gas emissions. A recent OECD report addresses this challenge by proposing climate change mitigation

through a well-being perspective, placing people at the center of climate action. The countries identified in our analysis, that perform well on SDG 12 and SDG 13 while also achieving high levels of well-being suggest there may be pathways to enhancing well-being without compromising environmental sustainability. These countries include a mix of large and small nations. For instance, Germany has heavily invested in renewable energy infrastructure, creating 'green jobs' while simultaneously reducing emissions. The combination of carbon taxes, incentives for renewable energy, and ambitious social policies has enabled Nordic countries to transition away from fossil fuels without burdening low-income households with higher energy costs. Similarly, Costa Rica ranks among the top nations for investment in renewable energy relative to GDP and has committed to achieving carbon neutrality starting in 2021. It offers an alternative model for developing nations to avoid the carbon-intensive development path of the West.

According to the World Bank, human capital constitutes 64% of the world's wealth, estimated at \$1,152 trillion. This highlights that human intelligence, health, and the development of professional and creative abilities—along with education—are becoming crucial resources, comparable to oil, gas, innovative technologies, and other assets of the national economy. A robust level of human capital fosters increased income, well-being, and quality of life not only for individuals but for the entire country. Therefore, "national programs should primarily focus on enhancing the education system, healthcare, and the social sector".

The contemporary world demands modern solutions. Innovations are now integral to every sector of economic activity. Currently, the advancement of high-tech industries represents a key competitive advantage for nations. According to Rosstat, there has been an increase in the contribution of these sectors to total GDP over the past decade. Consequently, producing high-tech products necessitates highly qualified professionals. As technological innovations expand within the country, the demand for human capital is set to rise accordingly.

Human development as a factor in ensuring the economic security of the EAEU countries. The Eurasian Economic Union (EAEU) is a growing integration association in the post-Soviet region, aimed at implementing a unified economic policy and facilitating the free movement of goods, services, capital, and labor resources [8]. One of its founding goals is the comprehensive development of modernization, cooperation, and enhancing the competitiveness of the member countries' economies within the global context. In today's environment, human potential has become a critical factor in ensuring the economic security of the EAEU.

An examination of population data from the EAEU countries over the last fifteen years indicates a notable rise in this metric. From the analysis of the data, several conclusions emerge. At the start of the study period (2005), Russia had the largest population, followed by Kazakhstan, Kyrgyzstan, and Belarus. Throughout this time, the population trends of these countries diverged. For instance, Russia exhibited relative stability, remaining close to its initial population level by 2020. In contrast, Kazakhstan showed positive growth, significantly increasing its population by 2020. Kyrgyzstan, however, maintained relative stability, with its population level staying near the initial figure.

Overall, the EAEU countries have experienced population growth over the past fifteen years, reaching notable increases by 2020. These developments underscore the significance of demographic factors in analyzing the region's socio-economic landscape and highlight the necessity of considering population trends when crafting development strategies.

Regarding age demographics, Russia, Belarus, and Armenia are characterized by a relatively low percentage of minors and a considerable elderly population, indicating that these nations are facing the challenges of population aging. This trend may diminish their economic and military influence, necessitating primary focus on ensuring the effectiveness of pension and healthcare systems, as the overall demographic burden on the working-age population is projected to nearly double by mid-century.

Thus, human potential plays a crucial role in all aspects of economic security, including

production, food, foreign economic, and socio-demographic security, among others. Key destabilizing factors affecting human potential and economic security in the EAEU countries include significant disparities in human development and socio-demographic progress; gender inequality; increasing income disparities; and declining quality of life and well-being. Furthermore, Russia, Belarus, and Armenia continue to face issues of depopulation and aging, which directly result in a loss of labor resources.

Given the considerable challenges surrounding the levels and synchronicity of human potential development across EAEU nations, it is essential to reevaluate approaches to intra-integration interactions concerning the formation, development, implementation, and preservation of human potential. Strengthening cooperation should be prioritized, focusing on the following key areas:

1. Rapid advancement of digital transformation across all areas of human activity and society as a whole.
2. Enhancing collaboration in healthcare.
3. Emphasizing environmental sustainability in the creation of new joint projects aimed at achieving sustainable human development.
4. Boosting cooperation in education, science, and innovation.

Addressing these priorities and implementing them will enable the development of human potential, thereby ensuring a sufficient level of economic security for both individual EAEU countries and the entire Union.

Furthermore, Russia's national goals and strategic objectives for development until 2024 are supported by the national projects established in various sectors, including demography, healthcare, education, housing and urban development, ecology, safe and high-quality roads, labor productivity and employment, science, digital economy, culture, entrepreneurship, and more. These projects align with the principles outlined in the human potential development concept.

The Strategy of Economic Security of the Russian Federation identifies the development of human potential and the challenge of enhancing its quality as critical areas and significant threats to economic security in the social sphere.

The Russian government places particular emphasis on several key areas to promote the development of human potential:

1. **Education:** The Government of the Russian Federation is investing in the education system, focusing on improving the quality of primary and secondary education as well as vocational training. Additionally, there is increased funding for higher education and a push for greater international collaboration. Federal Law No. 273 establishes fundamental principles and regulations governing education in Russia, covering primary, secondary, and higher education, alongside provisions for preschool, vocational, and adult education.

2. **Healthcare:** The Government of the Russian Federation allocates funds to enhance the healthcare system, concentrating on improving medical care quality, increasing access to services, and encouraging healthy lifestyles among citizens. The government has also implemented measures to combat infectious diseases. Federal Law No. 323 outlines the fundamental principles and regulations for the healthcare system in Russia, including the organization of medical care, funding for services, and patient rights protection.

3. **Science and Technology:** The government invests in advancing science and technology, particularly focusing on fostering innovation, technology transfer, and the growth of high-tech industries. Funding for research and development is being increased, along with efforts to enhance international cooperation in this field. Federal Law No. 127 lays down the basic principles and regulations for science and innovation development in Russia, covering research funding, intellectual property protection, and the commercialization of scientific findings.

4. **Social Services:** The Russian government is committed to enhancing social services, prioritizing affordable housing, social security benefits, and assistance for those in need.

Additionally, the government promotes cultural development and the preservation of Russia's cultural heritage. Federal Law No. 442 defines the key principles and regulations for social service provision in Russia, focusing on support for vulnerable groups, including the disabled and elderly, as well as affordable housing and social security.

5. Regional Development: The Russian government implements policies aimed at stimulating economic growth across its regions, particularly in job creation, support for small and medium-sized enterprises, and fostering regional cooperation.

In 2023, state initiatives for developing human potential in Russia will concentrate on these critical areas while also encouraging broader international cooperation.

IV. Discussion

I. Subsection One

Russia has established a comprehensive framework for its development until 2024, centered around national projects in key sectors such as demography, healthcare, education, and more. This multifaceted approach reflects the government's recognition of the interconnection between human potential and economic security, highlighting the importance of investing in various areas to foster sustainable growth and resilience.

Human Potential Development

The emphasis on human potential development is particularly relevant in today's rapidly changing global landscape. By prioritizing education, healthcare, science and technology, social services, and regional development, Russia aims to enhance its human capital, which is essential for economic advancement and social stability. The government's commitment to these areas not only seeks to improve individual quality of life but also to bolster national competitiveness in an increasingly interconnected world.

Key Areas of Focus

1. **Education:** Investments in education are crucial for equipping the workforce with the necessary skills to meet the demands of the modern economy. By improving the quality of primary, secondary, and vocational education, the government is laying the foundation for a skilled labor force that can adapt to technological advancements. The focus on higher education and international collaboration also suggests a strategic vision to foster innovation and attract global talent.

2. **Healthcare:** The enhancement of the healthcare system is vital for ensuring a healthy population capable of contributing to the economy. By improving access to medical services and promoting healthy lifestyles, the government addresses both immediate health concerns and long-term demographic challenges, such as population aging. Effective healthcare policies can significantly impact productivity and overall economic performance.

3. **Science and Technology:** Investing in science and technology is essential for driving innovation and economic diversification. By promoting research and development and protecting intellectual property, the government aims to create an environment conducive to technological advancements. This focus not only strengthens domestic industries but also positions Russia as a competitive player in the global market.

4. **Social Services:** Providing robust social services is integral to promoting social cohesion and stability. By ensuring affordable housing and support for vulnerable populations, the government addresses critical social needs that can otherwise hinder economic development. The emphasis on cultural preservation also reflects an understanding of the importance of social identity in fostering national pride and unity.

5. **Regional Development:** Stimulating economic growth in various regions is crucial for balanced national development. By supporting small and medium-sized enterprises and fostering

regional cooperation, the government seeks to reduce disparities between urban and rural areas. This approach not only enhances local economies but also contributes to overall national resilience.

Challenges and Considerations

While the strategic objectives set forth by the Russian government are ambitious, several challenges may impede their successful implementation:

- **Resource Allocation:** Ensuring adequate funding and resources for these initiatives may pose difficulties, especially in times of economic uncertainty or budget constraints. Prioritizing investments will be crucial for achieving desired outcomes.
- **Social Inequalities:** Addressing social inequalities and ensuring that all populations benefit from development efforts will be essential. Failing to do so could lead to social unrest and undermine national unity.
- **International Collaboration:** Strengthening international cooperation can bring about opportunities for knowledge exchange and technological advancements. However, geopolitical tensions may hinder collaborative efforts, particularly in science and technology.
- **Demographic Trends:** Russia faces demographic challenges, including an aging population and declining birth rates. Addressing these trends will require comprehensive policies that encompass family support, immigration, and workforce development.

The development of human potential is a vital component of Russia's strategic vision for the future. By focusing on education, healthcare, science and technology, social services, and regional development, the government aims to create a resilient and dynamic society capable of navigating the complexities of the modern world. However, addressing the inherent challenges and ensuring inclusive growth will be key to realizing these ambitious goals. As Russia moves forward, a holistic approach that considers the interplay of various factors will be essential in fostering sustainable human potential development and economic security.

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