EUROPEAN INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH AND MANAGEMENT STUDIES

VOLUME04 ISSUE06
DOI: https://doi.org/10.55640/eijmrms-04-06-12 Pages: 79-86

EDUCATION POLICY AND HUMAN CAPITAL DEVELOPMENT: ASSESSING THE EFFECTIVENESS OF VARIOUS EDUCATIONAL STRATEGIES IN UZBEKISTAN

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ABOUT ARTICLE

Key words: Public spending, technology, demographic shift, education, human capital.

Received: 06.06.2024
Accepted: 11.06.2024
Published: 16.06.2024

Abstract: This research article examines the crucial relationship between education and human capital, emphasizing their significant impact on both individual and societal development. Through an extensive literature review and empirical analysis, the article investigates the diverse dimensions of education as a catalyst for human capital formation and its subsequent effects on sustainable growth. The study highlights the importance of implementing effective policies and investments in education to promote human capital accumulation, which in turn enhances productivity, innovation, and inclusive socio-economic progress. Additionally, the article underscores the vital role of education in addressing contemporary challenges and achieving the United Nations' Sustainable Development Goals (SDGs). The findings of this research stress the urgency of prioritizing education and human capital development as essential elements of a comprehensive development strategy.

INTRODUCTION

Uzbekistan has demonstrated its commitment to the World Bank's Human Capital Project, which includes the Human Capital Index (HCI) as a measure of the impact of education and health on future workforce productivity. Currently, Uzbekistan's HCI score is 0.62, indicating that by age 18, students have achieved only 62 percent of their full potential. Despite the expectation of completing 12 years of schooling by this age, students in Uzbekistan are, on average, completing only 9.1 years, resulting in a

significant learning gap of 2.9 years. This underscores the urgent need to improve the quality of education within the country.

Additionally, there is a notable disparity between low and high-performing students, highlighting the necessity of prioritizing educational equity and inclusive policies. The estimated learning losses due to the COVID-19 pandemic are projected to reduce expected earnings by approximately 3.5 percent, equivalent to a purchasing power parity loss of US$465 million per year. However, the Uzbekistani government has taken steps to protect education spending, particularly for teacher salaries, and to implement distance learning to mitigate the pandemic's adverse effects.

Looking ahead, education policy must focus on accurately assessing and addressing the learning losses incurred, with the next two years being critical. At the provincial level, variations in per-student expenditures need further investigation to understand potential regional cost disparities. Public spending on education saw a significant increase from 2018 to 2019, both as a proportion of the total budget and GDP, driven primarily by the expansion of preschool education and reforms to enhance general secondary education (GSE). However, infrastructure investment, which had seen substantial growth before the pandemic, was affected by budget cuts during the crisis. Notably, preschool education has absorbed a considerable portion of public expenditure, surpassing per capita spending on general and specialized secondary education. Given ongoing reforms, spending on GSE is expected to continue rising, along with salary increases for teachers.

LITERATURE REVIEW

Goldin and Katz (2008) assert that higher levels of education significantly enhance labor productivity and facilitate accelerated national economic growth. They emphasize that educated individuals—including workers, managers, entrepreneurs, and citizens—are vital for economic progress because they drive the invention, innovation, implementation, and maintenance of modern technologies (pp. 1-2). This perspective is further supported by recent cross-country analyses. Hanushek and Woessmann (2012) demonstrate a strong correlation between cognitive skills and economic growth. Earlier research yielded mixed findings regarding education's role in influencing growth, largely due to the use of inadequate measures of educational attainment, such as completed years of schooling or national enrollment rates, which do not accurately capture skills.

Hanushek and Woessmann instead use direct measures of cognitive skills from international assessments of mathematics and science proficiency among students in 50 countries. They find that cognitive skills have a substantial impact on economic growth. Even small improvements in long-term

growth rates can be highly valuable; for instance, a 0.3 to 0.5 percentage point increase in growth rates can result from a quarter of a standard deviation rise in cognitive skill scores. To illustrate, the performance difference between the United States and top-performing countries in the Programme for International Student Assessment (PISA) is about 40% of a standard deviation.

To establish causality, Hanushek and Woessmann (2012) use an instrumental variables strategy, employing school institutional features (such as external exit exams, the proportion of privately operated schools, and the level of centralization in decision-making) as instrumental variables. This approach indicates that these policy factors are effective drivers of economic growth. Hanushek and Woessmann (2015) provide a more comprehensive analysis, quantifying the significant economic cost associated with low skill levels, a topic they previously explored in Hanushek and Woessmann (2010).

Addressing the issue of inequality, Goldin and Katz (2008) propose a conceptual framework in which earnings inequality and economic growth result from a "race" between education and technology. Their analysis suggests that when the education system produces skilled individuals at a pace that matches the increasing demand for skills driven by technological advancements, average income rises, and inequality diminishes. They highlight the United States' experience during the first three-quarters of the twentieth century as an example of this phenomenon. However, when the supply of skills lags behind technological progress, inequality surges, as seen since the 1980s. The authors argue that the "skill bias of technology" remained relatively constant throughout the century, with the notable increase in inequality primarily due to a slowdown in educational attainment.

RESULTS AND DISCUSSIONS

Uzbekistan's education system requires comprehensive reforms to enhance education quality and ensure learning equity, necessitating significant revisions to the Education Sector Plan (ESP) for 2021-2023. A critical deficiency is the lack of information on learning outcomes, which hinders the evaluation of educational effectiveness. To improve access, the government aims to expand the number of preschools and involve private providers to increase coverage and reduce capital expenditures. It is crucial to elevate the status and expertise of preschool teachers by establishing career paths that include training and improved salaries. The ESP also emphasizes the need for innovative curricula, assessments, and strengthening the quality and relevance of schools. While parent engagement is a priority, the mechanisms for effective involvement are still being developed.

Inclusion should be a central focus in the education agenda, as current policies for general secondary education (GSE) inadequately address the needs of vulnerable children beyond physical disabilities.

Although statistical data exist on children with disabilities, there is a lack of information regarding the size and characteristics of other vulnerable groups, along with specific plans to address inequality. Expanding the understanding of vulnerability among children is crucial, as it carries significant budgetary and programmatic implications. Estimates of out-of-school children (OOSC) are underestimated, and without an analytical context explaining the reasons behind children being out of school (e.g., early marriage, poverty, discrimination, transportation), there are no indicators or targets for reducing OOSC. The government should continuously review policy outcomes to refine the work plan and enhance cost-effectiveness.

Important policies are currently overlooked, demanding better planning and analytical capacity in the relevant ministries. Strengthening managerial and analytical capabilities, planning, financial management, and assessment and monitoring capacity within the Ministry of Public Education (MoPE) and Ministry of Preschool Education (MPSE) is crucial. Education expenditures must address issues affecting learning equity, focusing efforts and funding on the aforementioned challenges. How funds are utilized in education is equally as important as the amount spent. Preschool policies should prioritize learning equity and be driven by equity considerations. Therefore, funding should be allocated for identifying and serving underserved populations, such as children in remote areas, extreme poverty, and those with a different language than the classroom. Redistribution of funds, rather than additional funding, is necessary to enhance educational equity in preschool.Learning equity and system accountability should guide policies in general secondary education (GSE). Allocating resources for identifying and serving out-of-school children and those from disadvantaged backgrounds should be included in the MoPE's operational budget. Regular measurement and reporting of student learning quality are essential, and funding should be allocated for designing and implementing standardized testing, along with post-test analysis using socioeconomic data of participating students. While testing can be costly, efforts can be made to obtain external financing. What these plans lack is the capacity for self-evaluation and the recognition of the need for collecting high-quality data that can inform decision-making at the school level. It is crucial to use existing funds to improve system management.

Regarding women in higher education, the government should shift its approach from investing solely in gender equality to investing in human capital to boost productivity and economic growth.

To ensure education quality and learning equity, Uzbekistan's education system must undertake further reforms. Building upon the Education Sector Plan (ESP) of 2013-2017, the ESP 2021-2023 outlines additional reforms aimed at expanding access to preschool education, restructuring secondary and

specialized education, and increasing access to higher education. The education sector is committed to continuous improvement and remains regulated as it progresses in implementing appropriate reforms.

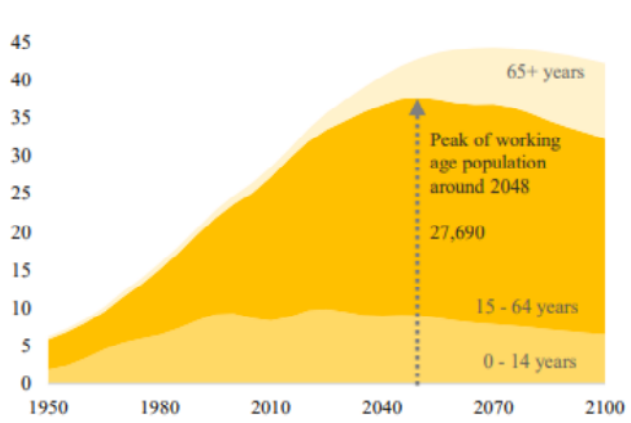
The ESP 2019-2023 takes into account the development strategy, presidential decrees, and government resolutions focused on improving the education sector and addressing developmental priorities aligned with international education commitments. The current ESP emphasizes two key objectives: (1) the implementation of a competency-based curriculum, and (2) the introduction of learning assessments to enhance system accountability and student performance. These objectives align with the national development policy and the Sustainable Development Goals (SDGs), particularly SDG 4, which aims to ensure inclusive, equitable, and quality education and promote lifelong learning opportunities for all .

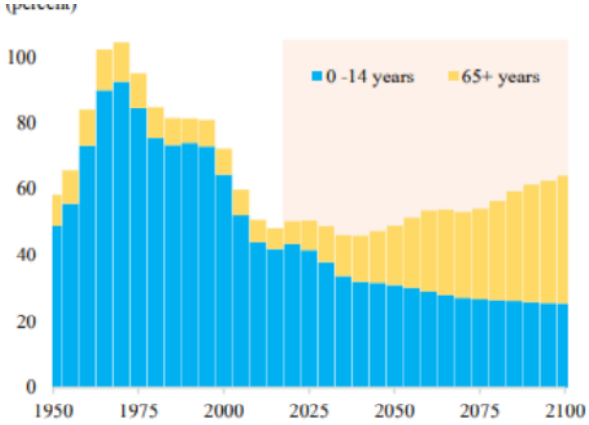
Through the ESP 2021-2023, Uzbekistan seeks to create a favorable educational environment that fosters the acquisition of relevant skills and knowledge, preparing students for their future roles in society. By aligning with international commitments and focusing on curriculum and assessment improvements, the education system aims to provide equal opportunities for all learners, promoting inclusive education and lifelong learning.

Access to quality education is crucial for Uzbekistan to harness the potential of its young and growing population. Over the years, the country's population has doubled since 1980 and is nearing 32 million (31.96 million in 2018). This demographic advantage presents an opportunity for sustained and robust economic growth, leading to increased prosperity and a reduction in poverty and inequality.

However, as the working-age population gradually ages, projections indicate a decline in the workforce starting from 2048, as illustrated in Figure-1 . This shift in the age dependency ratio, with a higher percentage of elderly individuals and a lower percentage of young dependents, places a greater burden on the economically active population. To counteract this challenge, Uzbekistan must invest in education to enhance productivity. By doing so, the country can continue to drive economic growth and enhance its overall quality of life.

Investing in human capital through education serves as the foundation for a more productive, innovative, inclusive, and stable society. By prioritizing education and improving the skills and knowledge of its population, Uzbekistan can overcome the demographic shift and ensure sustainable development. A well-educated workforce will contribute to higher productivity, technological advancements, and the creation of a more equitable society. By recognizing the significance of human capital investment, Uzbekistan can pave the way for a prosperous future for its citizens and the nation as a whole.





1-figure. Population Growth, 1950–2100 (Population (in millions))

2-figure. Total Dependency ratio, 1950–2100 (Dependency Ratio (percent))

Source: United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects (UN WPP). 2017. https://www.unicef.org/uzbekistan/media/686/file/Generation%202030%20Uzbekistan.pdf.

In 2018, a nationally representative assessment of grade 4 students was conducted by UNICEF in collaboration with the State Inspectorate for the Supervision of Education Quality. The assessment used a combination of the Trends in International Mathematics and Science Study (TIMSS) for math and science, and the Progress in International Reading Literacy Study (PIRLS) for reading. To analyze the results, item response theory (IRT) methods were employed, which assign different weights to test items based on their level of difficulty and discriminating power.

The IRT scale used ranged from 0 to 1,000, with a mean of 500 and a standard deviation of 100. After standardizing the test scores, the results revealed that the average achievement score for grade 4 students was 52 percent. Specifically, reading comprehension stood at 50 percent, math at 52 percent, and science at 59 percent. These findings provide an insight into the academic performance of Uzbekistan's grade 4 students in these subjects.

CONCLUSION

In conclusion, Uzbekistan recognizes the importance of education in unlocking the potential of its young and growing population. The country's commitment to the World Bank's Human Capital Project, as reflected in the Human Capital Index (HCI), demonstrates its dedication to improving education and health outcomes for future workforce productivity. However, there are challenges to overcome.

Currently, Uzbekistan's HCI score stands at 0.62, indicating that students have only realized 62 percent of their full potential by the age of 18. The average completion of only 9.1 years of education highlights a significant learning gap of 2.9 years, emphasizing the need for improved education quality. Furthermore, there exists a disparity between low and high-performing students, underscoring the importance of educational equity and inclusive policies.

The COVID-19 pandemic has further exacerbated the situation, leading to learning losses and potential long-term economic consequences. However, the Uzbekistani government has taken steps to protect education spending, particularly in terms of teacher salaries and the implementation of distance learning.

Looking ahead, Uzbekistan must focus on accurately assessing and recovering the learning losses incurred during the pandemic. Addressing variations in per-student expenditures at the provincial level is crucial to ensure regional equity. While public spending on education has increased, with a particular emphasis on preschool education and reforms in general secondary education (GSE), infrastructure investment has been impacted by budget cuts.

Comprehensive reforms are needed to enhance education quality and learning equity. This requires revisions to the Education Sector Plan (ESP) for 2021-2023, including addressing the lack of information on learning outcomes and prioritizing inclusive policies. Investments should be directed towards identifying and serving underserved populations, redistributing funds to improve educational equity in preschool, and strengthening the managerial and analytical capacity within the relevant ministries.

System accountability and regular measurement of student learning quality are essential. Designing and implementing standardized testing, along with the analysis of socioeconomic data, should be supported. The focus should not only be on additional funding but also on using existing funds to improve system management and decision-making at the school level.

Uzbekistan's education system plays a pivotal role in shaping the country's future. By investing in human capital and providing quality education, Uzbekistan can navigate demographic shifts, drive economic growth, and enhance the overall well-being of its citizens. With a commitment to continuous improvement, alignment with international commitments, and a focus on inclusivity and lifelong learning, Uzbekistan can unlock the full potential of its young population and pave the way for a prosperous and sustainable future.

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