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EXAMINING THE ROLE OF EDUCATION IN ADVANCING INDIA TO A FIVE TRILLION DOLLAR ECONOMY: IMPACT ON ECONOMIC PRODUCTIVITY

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ABSTRACT

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Concerning India, this research article examines the intricate relationship between gross domestic product and educational attainment. Considering the quickly changing economic environment and the growing recognition of human capital as a vital growth engine, the aim of this study is to present a thorough examination of the ways in which varying degrees of educational attainment affect economic output. This study employs a longitudinal case study approach and quantitative analysis to find the complexities of the relation between productivity and schooling. The conceptual framework provides a theoretical structure to direct the research by drawing on well-established theories in economics and education. The study's methodology relies on the extensive collection of data from various sources, like national surveys and educational records. Descriptive analysis is used in the research design to analyse the data with an emphasis on comprehending the longitudinal dynamics and trends. The study's findings provide strong proof of the connection between economic output in India and educational achievement. The discussion part explores more complex interpretations of the data, considering factors that are specific to the Indian setting, than just statistical correlations. To sum up, this research reveals the intricate connection between economic output and academic success, highlighting the necessity of focused policies and initiatives in order to fully use India's human capital.

KEYWORDS: ***educational attainment, economic productivity, economic growth***

INTRODUCTION

In its attempt for worldwide economic importance, India has set the lofty goal of creating a Five Trillion Dollar Economy, realising the necessity for equitable and sustainable growth. At the heart of this goal is education's vital role as a transformative force that can produce the skilled and creative labour force needed to increase economic output. This study aims to explore the intricate link between economic growth and education by examining the impact of educational investments on India's trajectory towards reaching the Five Trillion Dollar milestone.

India is a country that is experiencing rapid population growth and a varied economic environment, putting it at the forefront of both unparalleled prospects and difficulties. Given this, education becomes both the basis and the driving force behind the advancement of human capital, technological innovation, and entrepreneurial spirit—the three pillars of a strong and resilient economy. This paper aims to clarify the complex relationships that exist between economic productivity, educational approaches, and the ultimate goal of making India a major player in the world economy. The global debate on economic development has established the importance of education, as demonstrated by an abundance of research that emphasise its role in augmenting workforce competencies, stimulating innovation, and advancing steady economic progress. But given India's distinct demographic dividend and changing economic needs, it is critical to conduct a targeted investigation into the particular features of the relation between education and economic production.

This research aims to give a thorough comprehension of how education can be effectively leveraged to drive economic productivity by analysing the current state of education in India, closely examining budgetary allocations, assessing the efficacy of policies, and examining the impact on skill development. The comprehensive examination will clarify the obstacles that hinder integration and highlight areas that could gain from focused interventions and improved policy. Essentially, The purpose of this study is to add to the existing argument about India's economic development by highlighting the critical role that education plays in reaching the ambitious Five Trillion Dollar Economy benchmark. As we begin this investigation, Ideally, the study's findings will offer relevant information to stakeholders, educators, and legislators, assisting in the development of policies that would maximise education's transformative power for long-term economic prosperity.

LITERATURE REVIEW

The crux of various studies, views and comments by different academicians, educational thinkers, researchers, policymakers and educational reformers on the aforesaid topic is as follows**:**

The paper by **Tilak (2003)** focuses on the rise in public spending on education in India following the country's independence. It provides an in-depth view of the different facets of public education financing in India. It examines the rise in overall spending on education in both current and real prices, and the distribution of resources across and within sectors, the function of the Centre and states in financing education and the external assistance received. The article only provides a descriptive and analytical overview of the key concerns surrounding public education spending in India. With an emphasis on sectoral expenditures specifically, this article of **Bose, Haque and Osborn (2003)** emphasises the effects of growth government spending for a panel of thirty emerging nations throughout the 1970s and 1980s. The research indicates that government investment and total education expenditures are the two outlays that are strongly connected with growth at the sectoral level, when budgetary restrictions and omitted variables are considered.

The amount and distribution of public spending on education and it's utilisation are all examined in the paper by **De, Anuradha; Endow, Tanuka (2008),** both collectively and individually for the federal government and the states. It concludes that the GDP share of public spending on education has constantly been less than 4%. However, there have been significant changes in the patterns of expenditure by the government. According to the report, the center's share over state funding for education has grown and the spending patterns in seven states are studied to investigate the potential influence of spending on educational results. It shows that while there is an increase in education spending which has raised access for the less developed states but the learning outcomes and retention are still quite poor. **Iyer (2009)** also examined the effect of public spending on results in 115 districts of Uttar Pradesh, Andhra Pradesh and Karnataka. The analysis included Net Enrollment Ratio, transition rates and the percentage of Grade V boys and girls receiving more than 60% marks as outcome variables. The research employed the following inputs, the percentage of literate kids, the student teacher ratio and the expenditure per primary school student. Spending on primary education raises transition rates in Andhra Pradesh and outcome rates in Karnataka but none in Uttar Pradesh. The heterogeneity highlights the importance of undertaking research at the local levels.

Large majority of empirical studies demonstrated positive and significant effect of expenditure in education in economic growth and vice versa, however, there were cases of negative coefficients that were explained as a non-sufficient funding on education from the side of the government like in Nigeria or required lags of the dependent variables. The research by **Chandra(2010)** attempts to find a relation between expenditure in education and economic growth for the case of India using Granger Causality Testing. The linear test outcomes represents that there is a unidirectional causal relationship from economic growth to education spending, but at a lagged value of 6 or higher, the relationship becomes bidirectional, which essentially implies that education expenditure from previous years does indeed influence present economic growth to some extent and vice versa. Panel data with 14 cross sections, each covering a 17-year period from 1990 to 2006, was used in the study by **Idrees, Siddiqui(2013)**. The study comes to the conclusion that one significant factor influencing economic growth is public funding of education. According to the Fully Modified Ordinary Least Squares (FMOLS) approach, every dollar spent on education increases GDP by roughly 20.85 dollars. Spending on public education is an investment in labour that increases labour productivity, which boosts output levels and leads to economic growth. Additionally, it highlights that developing countries are more affected by public education spending on economic growth than are developed countries.

According to the study by **Miningou(2019)**, the number of years of high-quality schooling is positively correlated with the amount of money spent on education for each person of school age. Human Capital Index (HCI) and learning-adjusted years of schooling (LAYS) are the indicators used for the education component. The input variables studied are public education expenditure as a share of GDP or as share of total public expenditure and the expenditure per student or per school-age child. However, due to inefficiencies in labour market conditions, governance and the nature of education aid, it is estimated that sixteen percent of public financial resources allocated to education in developing nations are misused. It highlights the fact that in order to achieve better educational outcomes, public resources allocated to the education sector must be used more efficiently and expenditure on education must increase. **Virdi(2022)** analysed the relationship between Education and Economic Growth for India and selected High-Income and Low-Income states over the period 1971-72 to 2019-20 and she observed a long run equilibrium relationship between education expenditure at all levels and economic growth. On comparing the effect of education expenditure on economic growth in high-income and low-income states, she concluded the fact that secondary education expenditure had a significant impact on economic growth in the long-run in high-income states, whereas in low-income states, it was Primary education which had a significant impact on economic growth in the long-run. Primary education had the most significant effect on economic growth in terms of both GER and public expenditure on education and there ran a unidirectional long-run causality from Primary education (for both enrolment and public expenditure) to economic growth in case of low income states. The shifts in government policies and spending patterns in school education were evaluated by **Harikrishnan, Hiremath(2023**). They observed disparities with reference to public provision of education across states, proving the expenditure done by the government is inadequate which motivates the private sector to enter the education sector and commercialize it.

OBJECTIVES

- To investigate the current allocation of resources to the education sector at the national level.
- Identify systemic challenges and barriers that hinder the seamless integration of education and economic productivity, proposing solutions to overcome these obstacles.
- Investigate the correlation between level of education and economic productivity,

NEED OF THE STUDY

As the foundation of the development of human capital, education is crucial in figuring out the route of economic growth and overall national development. People with higher levels of education are more productive, innovative, and technologically advanced—all factors that are crucial in achieving the nation's economic goals. Through a careful examination of the intricate relationship between public education spending and economic growth, this research could offer policymakers with vital new information. These realisations can help direct the formulation of effective plans in crucial areas, concentrating resources on objectives related to sustainable and long-term development. Additionally, the outcomes of this study can be extremely helpful in educating the public about the need of education for economic growth. An important first step in strengthening the country's economic base is raising public spending in the education sector, which might be made possible by this greater knowledge.

In conclusion, research on how public education spending affects India's economic expansion in relation to the issue of moving towards a $5 trillion economy is essential. It clarifies the intricate relationships between economic growth and education, providing a path forward for well-informed policy choices and making a significant contribution to the general prosperity and well-being of the country.

RESEARCH METHODOLOGY

This research uses a quantitative approach, analyzing data from the 2001-2021. It is an attempt based on secondary data sourced from Ministry of Education and the Handbook of statistics ; Reserve Bank of India. The research design employed for the study is descriptive in nature. The variables used in the study are:

Expenditure on education It refers to the total amount of financial resources allocated and spent by government on educational activities and services.

Gross Domestic Product It represents the total monetary value of all goods and services produced within the borders of a country over a specific period of time, typically measured annually or quarterly. GDP can be expressed in nominal terms or adjusted for inflation to provide real GDP, which reflects changes in production and income after accounting for price changes over time.

DESCRIPTIVE ANALYSIS

Table 1: Expenditure on education and GDP from 2000-2021 (in crores)

Years	**Expenditure On Education**	**GDP**
2000-01	62498.09	39610.20
2001-02	64847.71	41568.62
2002-03	68561.54	43192.93
2003-04	73044.93	46624.17
2004-05	81280.85	50283.61
2005-06	94483.7	54952.38
2006-07	110340.36	60043.15
2007-08	125379.63	65928.19
2008-09	152822.4	68493.45
2009-10	190136.08	74301.51
2010-11	233510.11	81924.81
2011-12	270091.78	87363.29
2012-13	299212.54	92130.17
2013-14	333231.91	98013.7
2014-15	361311.78	105276.74
2015-16	387155.32	113861.45
2016-17	428010.96	121960.06
2017-18	458535.09	130108.43
2018-19	493760.55	139929.14
2019-20	571904.19	145346.41
2020-21	625373.95	136871.18

Source: Analysis of Budgeted Expenditure on Education, MHRD, New Delhi, Handbook of statistics of Indian economy; Reserve Bank of India

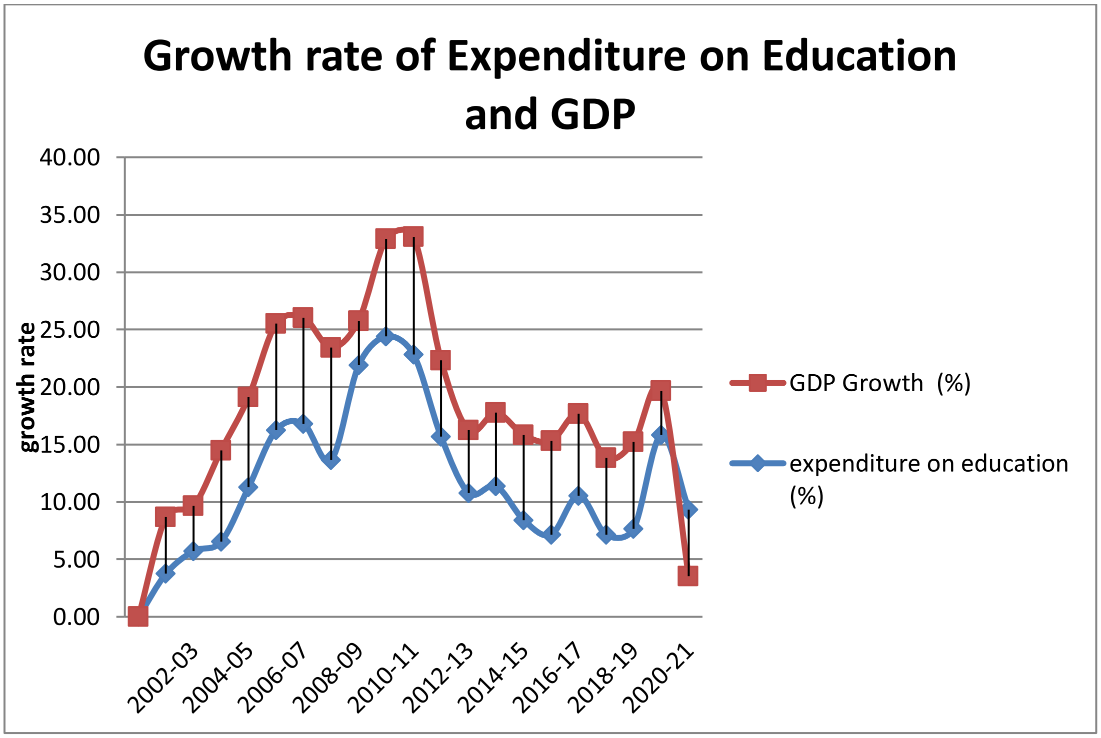
The above table presents the total expenditure by the government spent on education sector in the first column as well as the year wise GDP of the Indian economy on the second. It is apparent from the table that with the years both (Expenditure on education and GDP) have been rising. Over the years the importance of education has been recognized as a priority to achieve an overall economic growth and development and thus this increased expenditure on education is contributing to an increasing GDP.

Table 2: Growth rate of expenditure on education and GDP (in percent)

Years	**Growth rate of expenditure on education**	**GDP Growth rate**
2001-02	3.76	4.94
2002-03	5.73	3.91
2003-04	6.54	7.94
2004-05	11.28	7.85
2005-06	16.24	9.28
2006-07	16.78	9.26
2007-08	13.63	9.80

2008-09	21.89	3.89
2009-10	24.42	8.48
2010-11	22.81	10.26
2011-12	15.67	6.64
2012-13	10.78	5.46
2013-14	11.37	6.39
2014-15	8.43	7.41
2015-16	7.15	8.15
2016-17	10.55	7.11
2017-18	7.13	6.68
2018-19	7.68	7.55
2019-20	15.83	3.87
2020-21	9.35	-5.83

Source: author's own creation



Source: Author's own creation

The table 2 shows the growth rates of both expenditure on education and GDP over the years. The chart above displays that GDP is positively related to the expenditure on education. A noteworthy increment in the percentage growth of education expenditure is substantially strengthening the Gross Domestic Product. It is clear that a notable 16% increase in the growth rate of educational spending in 2005–06 caused a corresponding rise in the GDP growth rate, which increased from 7.85% to 9.28%. It is also noticed in the chart during the year 2010-11, the maximum growth of expenditure is complemented by a sharp rise in GDP growth rate. Hence, to achieve a five trillion dollar economy a significant amount of expenditure must be invested in education sector.

CONCLUSION

In summary, the examination of GDP and education spending growth rates across time, as shown in Table 2, highlights a strong and positive correlation between the two variables. The graph demonstrates that a rise in the percentage growth of education spending is correlated with an increase in the GDP (gross domestic product).

This relationship is further demonstrated by the fact that the year 2010–11 saw the largest increase in education spending, which was matched by a notable acceleration of the GDP growth rate. This result emphasises how essential education sector investments are to the growth of the economy overall.

This relationship is further demonstrated by the fact that the year 2010–11 saw the largest increase in education spending, which was matched by a notable acceleration of the GDP growth rate. This result emphasises how essential education sector investments are to the growth of the economy altogether. The table's results confirm how important it is to prioritise and increase education spending in order to help India reach its five trillion dollar economy target. The discovered positive association suggests that deliberate investments in education can be utilised to promote productivity, innovation, and economic growth.

The country's aspirations for major economic milestones make it clear that substantial and consistent investments in education are necessary to realise this vision. The information provided supports the idea that a strong education system propels economic expansion and is essential to guiding the country towards its economic goals. In light of this, when developing strategies for long-term and sustainable development, policymakers are encouraged to take into account the historical relationship between GDP growth and education spending.

Based on the established correlation between GDP growth and education spending, the following policy initiatives and ideas aim to further reinforce the linkage between education investment and economic development, thereby advancing the objective of realising a Five Trillion Dollar Economy:

- Government needs to think about boosting the budgetary allotment for education while making sure that a sufficient and long-term sum is set aside for the field. This involves setting aside money for the creation of infrastructure, teacher training programmes, teaching resources, and technological integration.
- Make direct investments in teacher training programmes, curriculum development, and the use of cutting-edge teaching techniques in order to raise the standard of education. To produce a workforce that is competitive and skilled, high-quality education is crucial.
- Assess the efficacy of current education policies on a regular basis and make data-driven decisions to enhance and optimise them. Examine how spending on education affects student retention, learning performance, and total educational attainment.
- Education policy ought to adapt to the needs of the dynamic labour market. It is necessary to implement programs that place a strong emphasis on skill development and vocational training to prepare students for the demands of the modern workforce.

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