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## Education, Human Capital Formation and Economic Growth in Sub-Saharan African Countries: A Conceptual Analysis

### Abstract

According to the human capital theory variations in economic growth are explained by differences in the influence of education on human capital formation within countries. Despite huge government investment in education aimed at building human capital countries within the Sub-Saharan African (SSA) region continues to face low economic growth. This conceptual paper thus investigates the relationship between education, human capital formation and economic growth in SSA. Findings from the theoretical and empirical analysis reveal that education in SSA countries seems to make an insignificant contribution to human capital formation and economic growth jointly. In conclusion, the economic development variations observed across countries might be an indication of the need for a context-based human capital-based education approaches to strengthen economic growth within SSA countries. The study recommends that educational approaches that strengthen human capital creation should be adopted to promote economic growth in SSA countries.

Keywords: human capital creation, education, economic growth, Sub-Saharan Africa

### Introduction

Although the human capital theory links education with the acquisition of human skills, knowledge and competencies that leads human capital creation which translates to economic growth in any economy there might be gaps on the implications and application of the theory that remains an explanandum. The human capital theory approach presumes that education increases the productivity and efficiency of workers by increasing the level of cognitive stock of economically productive human capability. Education facilitates economic growth through human capital creation that subsequently enhance the marginal productivity of labour, advance use of technology, technological innovations, earning and savings which all collectively leads to increased productivity (Marginson, 2019). The human capital theory assumes that education creates equal opportunities for development of human potential which contributes to economic growth.

Human capital theory thus provides a rationale and justification for nations' policy goals on investment in education aimed at promoting economic growth through human capital. Marginson (2019) explicates that human capital theory education driven policy goals are based on the assumption that, ensuring equality of opportunity to all available productive talent would become educated consequently optimising the economics of education. Various global bodies such as the United Nations Educational, Scientific and Cultural Organisation (UNESCO), Organisation for Economic Cooperation and Development (OECD) have advocated for the human

capital approach. Nonetheless, Marginson (2019) argued that despite the prominence and dominance of human capital approach in public policy there might be wide a gap between what is the envisaged application and implications in theory and the real world and societies.

Economic growth in SSA region is slower than in most regions. The United Nations Conference on Trade and Development (UNCTD) (2021) report shows that 33 least developing countries (LDCs) out of the 46 LDCs are from Africa and SSA region largely. An analysis of UCTD reports since 1971 the majority of LDCs are from the SSA region. LDCs states are deemed to be highly disadvantaged in their development process, structural, historical and also geographical reasons. This means that most SSA countries continue to be faced with vulnerable developmental and structural processes. Given that many countries in SSA are experiencing slow economic growth and yet it appears that it is impossible for any country to achieve economic growth without the necessary education that fosters human capital it is imperative for this study to explore the relationship between education, human capital creation and economic growth.

### **Educational philosophies and principles**

According to Booyse and Du Plessis (2014) educational approaches are founded on different philosophies that determine and influence the purpose and intended implication of the curriculum, learning as well as the teacher approach. This means scientific theories provide theoretical insights and knowledge that influence education systems and practices.

Table 1 shows various philosophical approaches that underpin educational outcomes and its implication to teachers and learners in the educational process of teaching and learning. Booyse and Du Plessis (2014) explain that educational pedagogies are predominantly, behaviouristic, naturalistic and humanistic approaches. Wortham (2003) posits that those theories of education rest on the conception of human nature. Based on the conception of human nature underlying these theories the educational philosophies have their foundations. A naturalistic educational approach assumes that all rational beings have different intelligences that can be stimulated through using different learning approaches. Granger (1996, p. 87) describes the “multiple intelligences as variability in respect to the efficiency of the sensory input mechanism from person to person but the biochemistry/biophysics for recording, retrieval, filing and processing would essentially be the same would neither work nor not work”. A behaviourist educational approach to teaching is considered as a systematic way of shaping the student’s behaviour as such teaching and learning theories focus on reinforcing the desired behaviour (Wortham, 2003). In principle, behaviourist educational approach seeks to condition the student to produce the behavioural results. There is a consensus amongst education theorists that education should lead to productive livelihoods. However, it appears the challenges remain of the formulation of educational approaches that integrate human capital theoretical principles to the end of achieving economic growth.

Table 1: Various philosophical approaches to curriculum development and its implication to teachers and learners adapted from Booyse and Du Plessis (2014)

Approach	Behavioural	Academic	Humanistic	Naturalistic
Purpose	Relies on technical and scientific principles Paradigms, models, logical positivist, conceptual empiricists rational scientific	Knowledge content traditional intellectual, simplistic, rooted in philosophical and intellectual works	Non-scientific creative problem solving, progressive philosophy and child centred movement, meets demand of the society	Creative problem solving, pragmatic, cooperative curriculum
Curriculum implications	Knowable components that can be selected and organised	Curriculum development is systematic process directed by academic rationality and theoretical logic	Curriculum development is subjective, personal emphasises self-efficiency	Same curriculum elements of the academic experience –based and technological approaches can be used
Learning approach	Learners are significant influenced by their learning environment and their context	Direct instruction where the teacher is in control of the content and the sequence of the information that students receive  Student focus on assimilating information through listening	Learners are highly motivated to learn and assume responsibility for their own learning	There is ongoing participation forms specific interest groups
Teacher	Teacher must perceive learning as cognitive functioning individual within a social context Managing, predicting and directing learning outcome	It is a fixed approach Teacher centred with the teacher as the centre of knowledge	Permission for more teacher inputs in curriculum decision Informal and hidden curriculum is also important, not only the formal and planned curriculum Facilitate learning as partner and not as an instructor	Teacher makes their ideas and values known Teacher centred approach

### Theoretical foundations of human capital formation and economic growth

To understand why the phenomenon has grown over time it is important to gain an understanding of the conceptual and theoretical relationship between what human capital, education and economic growth from the human capital theory perspective. As far back as 1776, Adam Smith in his book *Wealth of the Nations* identified education and training as the most important investment in a human being that transform human abilities into human capital which subsequently translates to

economic growth in a country. Since then, scholars have extended research on the skills acquired through education as grounds for creating human capital and economic growth. The neoclassical economic growth theory beheld the assumption that economic growth in the production function is an output of labour, capital and technology. The neoclassical economic growth assumed the determinants of economic growth in the production function were only affected by external factors hence these theoretical assumptions did not directly include the concept of education and human capital formation.

According to Mankiw et al. (1992) the neoclassical theory suffered from two major weaknesses firstly, it disregarded education as a factor of production function instead explained economic growth as determined by variations of factor inputs that are exogenously determined and as well as an unexplained part which was called the Solow Residual. Secondly, the neoclassical economic growth conceptualised economic growth as an outcome that is dependent on exogenous factors which no one has control of with failure to explain determinants of these exogenous factors (Mankiw et al., 1992). This traditional substratum implied that economic growth policies were based, only on external factors and neglected internal factors. This demonstrates the shortcoming that resides with the application of only neoclassical economic growth theories that it overlooked the instrumental role played by education.

Scholars subsequently, in 1960s extended the neoclassical theory to incorporate internal policies and factors that might explain economic growth, the proposition that human capital was the residual factor that explains growth that is not accounted by an increase in capital, labour and technological advances was increasingly explored. Schultz (1961) findings showed that an increase in national output has been largely due to human capital compared to non-human capital such as an increase in the number of hours worked, land or physical and monetary capital. Schultz (1961) submitted that even though people acquire useful skills and knowledge, these are often not considered as a form of capital, yet it is this form of capital that is part of the product of deliberate investment that has led to the growth of Western societies at a faster rate than conventional capital and it forms the most distinctive feature of the economic systems. Schultz (1961) findings revealed that an increase in national output has been largely due to human capital compared non-human capital such as an increase in the number of hours worked, land or physical and monetary capital. Mankiw et al. (1992) developed an augmented Solow model that incorporates human capital as an additional explanatory variable that explains the human capital accumulation. The intersection between education and human capital in promoting economic growth is thus encapsulated in the human capital. Since then, there is a global emphasis on human capital driven education and economic development policies in many countries.

### **Empirical evidence from comparative studies of developing economies**

Although theoretical assumptions provided the necessary universal theoretical armoury for the principles behind governments' investment in education empirical evidence on the relationship between education, human capital formation and economic growth in SSA countries is inconclusive. Oseni et al. (2020) observed that most SSA countries' government spend some amounts on education every year yet

the impact of such expenditure on education is inconsistent. The observed absence of economic growth in SSA raises a question about the relevance of the education to develop the human capital that contributes to economic growth as postulated by the principles of the human capital theory. These questions seek not to reject the validity of the human capital theory but rather to appeal for more scholarly debate and inquiry into the phenomenon to the end of bringing Prometheusian fire and light to the plight of the region. Whilst empirical evidence observed that educational variables that have an effect on economic growth differ across countries it does not commit to identifying the different schooling aspects which are likely to have a different effect due to different contextual factors, suggesting that educational intervention or approaches may not work the same everywhere and the same time.

Wang et al. (2021) concluded that economic development in Sub-Saharan African countries needs to reach certain thresholds of economic development first before the human capital expenditure of health may benefit the SSA region. Angrist et al. (2021) findings revealed that Africa as a whole has the average lowest learning of 352 lagging behind all other parts of the world which rated Average scores by region are as follows: East Asia and Pacific (445), Europe and Central Asia (489), Latin America and the Caribbean (402), Middle East and North Africa (399), North America (529). The study used average learning as a proxy for measuring human capital across a total of 162 countries. The low average learning found by Angrist et al. (2021) implied that Africa has the lowest human capital formation for the stated period. These findings are consistent with those World Bank (2021) who observed that the human capital index for the region falls behind 0.3 compared to standard global ranking of above 0.4. This evidence suggests that whilst education has not yet reached the threshold where it creates the human capital necessary for economic growth in SSA. Yet again the other message that might be drawn from these findings could be that the human capital theory is valid within certain conditions and invalid in other parts of the world.

Oluwatobi et al. (2020) found that SSA required human capital to build a knowledge driven economic growth. These findings suggest that SSA countries can promote economic growth through building human capital within their countries. These views affirm the theoretical principles postulated by Romer (1989) a proponent of the human capital theory who estimated in the equation of economic growth estimate. Romer (1989) observed that education represented the residual factor that explained the greater portion of the change in economic growth despite the increase in physical productive factors that is the number of work, the number of hours, and the total number of hours worked. Romer (1989) expounded that persons with greater skill may raise the productivity of others with whom they interact, therefore accumulation of human capital may increase total factor productivity in an economy. This implies that education as an important means for investing in human capital and health which jointly drive economic that contribute to economic growth. Romer (1989) attributed physical skills, educational skills acquired in primary and secondary schools as well as scientific talent acquired in post-secondary school as key determinants of economic growth in any economy.

Abdouli and Omri (2021) found a bidirectional causality relationship in 19 Asian countries during the period of 1985 to 2017. These findings highlight the critical role that educators play in building stock of human capital that facilitates

economic growth. Findings in a study by Fukao et al. (2021) revealed that in Japan for 130 years from 1885 to 2015 experienced increased labour productivity which can be attributed to human capital as a major contributing factor to economic growth pre and post the world war eras in that country. In particular, they found a total increase in Japan's labor productivity rose 46-fold, with increases in the capital-labor ratio accounting for 40% of this rise, improvements in labor quality for 35%, and total factor productivity (TFP) growth for 36%. Fukao et al. (2021) findings validated theoretical assumptions of human capital theory. However best as the evidence asserts the generally accepted principles of the human capital theory it can be argued that the whole theoretical constructs cannot be held to be true without exception. In contrast to Fukao et al. (2021) findings as well as the principles of the human capital theory Mohamed et al. (2021) found that an insignificant effect of human capital on economic growth was attributed to amongst other things lack enough capacity in Egypt to utilize the productivity of human capital efficiently. It is evident from these findings that human capital theory in its attempt to explain education and human capital concepts into a scientific theory that cover the whole universe in a coherent and unified way it does not and maybe cannot show that it follows of necessity from the social science nature of things. However, it would be a mistake to assume that the human capital theory is not relevant to the SSA countries without questioning and understanding the necessary conditions that should predicates education to develop human capital which drives economic growth. What we would rather be said is that implications and application of the human capital theory in other context represents favourable examples of what education could produce under a given set of conditions.

## Conclusion

It can be concluded that education within SSA has not adequately developed to promote human capital formation and economic growth as an outcome. This implies that although the human capital theory may hold promises to better development of human beings and their societies, its effect is depended on the condition of the context it is applied. Therefore, this study recommends that Sub-Saharan African countries should explore alternative approaches for building educational systems that are based on the human capital perspective to foster human capital creation and economic growth with their economies.

## References

- Abdouli, M. & Omri, A. (2021): Exploring the nexus among FDI inflows, environmental quality, human capital, and economic growth in the Mediterranean region. *Journal of the Knowledge Economy*, 12(2), 788-810.
- Angrist, N., Djankov, S., Goldberg, P. K. & Patrinos, H. A. (2021): Measuring human capital using global learning data. *Nature*, 592(7854), 403-408.
- Booyse, C. & Du Plessis, E. (2014): *Curriculum studies, development, interpretation, plan and practice*, 2<sup>nd</sup> Edition. Hatfield: Van Schaik Publishers.
- Fukao, K., Makino, T. & Settsu, T. (2021): Human capital and economic growth in Japan: 1885–2015. *Journal of Economic Surveys*, 35(3), 710-740.

- Granger, C. R. (1996): The Naturalistic Education Theory: In Search of a Unified Learning Theory for Instructional Methodology and Tactical Education. *Journal of Thought*, 31(2), 85-96.
- Mankiw, N. G., Romer, D. & Weil, D. N. (1992): A contribution to the empirics of economic growth. *The quarterly journal of economics*, 107(2), 407-437.
- Marginson, S. (2019): Limitations of human capital theory. *Studies in Higher Education*, 44(2), 287-301.
- Mohamed, R. A., Abd El-aziz, A. I., Ramadan, H. N., Abd El-sayed, M. H. & Emam, H. A. (2021): Impact of Human Capital on Economic Growth in Egypt: An ARDL Approach. *European Journal of Economics, Finance and Administrative Sciences*, 108, 1450-2275.
- Oluwatobi, S., Olurinola, I., Alege, P. & Ogundipe, A. (2020): Knowledge-driven economic growth: the case of Sub-Saharan Africa. *Contemporary Social Science*, 15(1), 62-81.
- Oseni, I. O., Akinbode, S. O., Babalola, D. A. & Adegboyega, S. B. (2020): Government spending and school enrolment in sub-Saharan Africa: A system GMM approach. *Journal of Economics & Management*, 40, 91-108.
- Romer, P. M. (1989): *Human capital and growth: Theory and evidence* (No. w3173). Cambridge: National Bureau of Economic Research.
- Schultz, T. (1961): Investment in human capital. *The American Economic Review*, 51(1), 1-17.
- United Nations Conference on Trade and Development (UNCTD) (2021): *Least Developed Countries*. <https://unctad.org/topic/least-developed-countries/list> (Accessed 2 August 2021).
- Wang, Q. S., Hua, Y. F., Tao, R. & Moldovan, N. C. (2021): Can Health Human Capital Help the Sub-Saharan Africa Out of the Poverty Trap? An ARDL Model Approach. *Frontiers in Public Health*, 9, DOI:10.3389/fpubh.2021.697826.
- Wortham, S. (2003): Learning in Education. *Encyclopedia of Cognitive Science*, 1(563), 1079-1082.

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