

Educational Illiteracy between Nigeria and China: A Tripartite Comparative Analysis

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Abstract

The study focused on approaches to educational illiteracy in Nigeria in China: A Tripartite Comparative Analysis. Holistic development in some countries of the world has been frustrated by the absence of digital awareness and technological creativity which are achieved through the spread of qualitative knowledge in a uniform manner. The poor spread of such knowledge, which has since been embodied into formal education in educational institutions results in educational illiteracy. Hence, countries of the world have instituted different strategies to curb the issue which in some climes like Nigeria and other developing countries of the world has been existential. The aim of the study is to compare the approaches to educational illiteracy between Nigeria and China through a tripartite model. The descriptive research design was adopted, while the sources of data were majorly secondary through the use of internet sources, textbooks, print publications, etc. The structural-functional theory was adopted for the study. It was discovered that there is a colossal disparity between Nigeria and China in terms of structure and pattern of educational institution(s) administration, budgetary allocations to the education sector, and pattern/content of learning, with China faring better than Nigeria. It was recommended that tertiary educational institutions should be established to focus on specific areas to ensure specialization, and expertise, amongst both instructors and students and also to reduce over-crowding in Nigerian tertiary institutions.

Keywords: Education, illiteracy, digitalization, technicalization, Nigeria, China.

Introduction

From the origins of mankind, many practices, tools, equipment, technologies and even abstract ideas which have shaped the socio-economic, political, and psychological composition of the globe and its inhabitant have emanated from inventions and innovations. These inventions and innovations have been materialized in some factors including the quest to proffer solutions to complex human problems, the desire to understand the nature, origin, composition, and working of objects or behaviours of both abstract and concrete phenomena, and the need to adapt to global socio-environmental changes (European Central Bank, 2017).

Central to these inventions and innovations is knowledge which is gained from constant foresight, learning and research, and which further translates to creative discoveries. For instance, in the natural sciences parlance, the discovery of Nitrous Oxide (N₂O) as anaesthesia in the 1840s by Joseph Priestley and Humphry Davy was necessitated after a series of experimental research on the same gas which was only used as a preserving agent in the 1700s (Davison, 2018). In the technological milieu, the Industrial Revolution which first began in Britain in the 18th Century was induced by the transmission of tacit knowledge during apprenticeship in areas like Britain itself, Ireland, and Germany (Hornung et al. 2022). In the academic/scholarship parlance, the evolution of disciplines like Public Administration in the late 19th Century was impelled by the development of ideas which differentiated

administration from mainstream politics and the spread of such ideas by classical scholars like Wilson Woodrow, Frank Goodnow, L. D. White, and W.F. Willoughby, etc. (Biswas, 2023). In the sociocultural ambience, the unified and mono-cultural state of Eastern Asian countries like Japan and South Korea which is a major contributing factor to the political stability of these countries since WW II (1939-1945) is a factor of the cultural education which was instituted through the Juche policy by great leader Kim IL Sung in the mid-20th Century (Amadi, 2020).

From the foregoing, the importance of knowledge and its proliferation is all-encompassing. However, though there are many forms through which such knowledge could be transferred, it is observed that the most organized platform for such knowledge transfer is through formalized institutions such as schools, as a result of an increase in population and socio-economic complexities of human activities. While these formal institutions at inception were seen as objects of status by the elites in the society, the gap was bridged in the 20th Century as the rise in the demand for skilled and learned human capital accommodated the different strata of the society. Consequently, the state of formal education and the rate at which it expands qualitatively amongst citizens of a country now determines the literacy levels of such country, and which is also seen as a major driver of development and civilization in the world. Hence, the higher and qualitative the educational literacy levels, the higher the chances of orchestrating and sustaining development in respective countries of the world (Eskelson, 2020).

Nigeria has remained a developing country since her return to democracy in 1999 owing to low human development capacity which is determined by factors including literacy rate (as determined by the Mean Years of schooling and general literacy percentages), Per Capita Income (PCI), and Life Expectancy (LE) (World Bank, 2023; Lawanson & Umar, 2021). Specifically, the levels of educational literacy in this regard are not just the number of educated persons, but also the average number of completed years of education of a country's population aged 25 years and older, excluding years spent repeating individual grades. Hence, this which is measured using the Mean Years of Schooling (MYS) takes into account those with no level of education, those with incomplete and completed lower and higher secondary education, as well as those with incomplete and completed tertiary education. Thus, the MYS offers insight into both the rate and spread of educational literacy amongst the population about other factors that may affect the completion of education in specific countries. This to a large extent further indicates the quality of education in these countries (Education Policy & Data Center, 2021).

In Nigeria, available statistics show that MYS is at 7.2 which is lower than the global minimum average of 8.7, thus, indicating a low level of formal education in the country. In respect of the quality of education and best educational systems in the world, Nigeria ranked 74th in 2022 out of 140 countries, indicating deteriorating levels of labour competencies as well as quality described in terms of digital literacy, interpersonal skills, and the capacity to think critically and creatively (Nwite, 2022). This is however different from the situation in China which was predominantly educationally backward before the onset of the 21st Century. Aside from having literacy spread percentage of over 99.83% as of 2021 (which is above Nigeria's 77.62% in the same year), the country recorded an average MYS of 10.75 in 2020, indicating a 2.5 increase from its MYS of 8.25 in 2010. China's steady improvement in the educational sector is attributed to factors including investment in the development of professional technical human resources, the training of highly skilled talents, education infrastructural development through funding, and the direct supply of trained talents to enterprises (China Global Television Network, 2023; Our Data World, 2023). Additionally, the country ranked 22nd in the list of countries with the best educational systems in the world, a rise from its rank of 24th in 2020 (World Population Review, 2022).

Essentially, Nigeria has remained backwards in the fight against educational illiteracy owing to challenges like inadequate funding, poor educational infrastructure, poor supervision, unqualified educational administrators, and inadequate professional teachers, overcrowding in classrooms, etc. (Jacob & Josiah, 2021). For instance, in the aspect of infrastructure, the Senate President of the National Association of University Students (NAUS), Comrade Ibrahim Lawal lamented in 2021 that both

students in some of the Federal and State-Owned institutions fight to secure venues for lectures and examinations because of acute shortage of lecture halls, while other institutions were faced with a paucity of equipment for practical experiments, and lecturers also struggling for office spaces (Nigerian Tribune, 2021).

Having exposed the discrepancies in the state, quality and levels of educational literacy in both countries, the study is undertaken to compare the approaches to tackling the problem of educational illiteracy according to three variables including structure of administration, budgetary allocation, and pattern/content of learning. This comparison aims to explore probable recommendations for the dwindling state of education in Nigeria and other educationally backward developing countries.

Conceptual Framework

Concept of Educational Illiteracy

For the holistic comprehension of educational illiteracy, it is necessary to first explore the meaning of illiteracy. The definition of illiteracy is multifaceted and specific to diverse organizations, cultures, contexts, and even professions. Though it is generally viewed as the inability to read and write (Oxford Language Dictionary, 2022), more recent and specific definitions have emerged over the years. Consequently, to effectively understand what illiteracy is, it is important to define literacy as a concept.

According to UNESCO (2004), literacy involves a continuum of learning in enabling individuals to achieve their goals, develop their knowledge and potential, and participate fully in their community and wider society. This definition points out that literacy entails the use of theoretical and practical forms of learning for personal and public cum holistic development. According to Pierre et al (2014), literacy which is also referred to as cognitive skills is defined as the ability to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, and to overcome obstacles by taking thought. Here, emphasis is still placed on both theoretical and practical learning, as well as their use in observation, adaptation and reasoning, all engulfed in the major aim of achieving results.

From both definitions above, one can understand and define holistically the concept of illiteracy. It is veritable to aver that the holistic definition of illiteracy must highlight the absence of theoretical and practical learning (education) while also enhancing the inability to apply learning results in real-life situations. Hence, Encyclopaedia of Oxford University Press (2018) defines illiteracy as not just the inability to read or write, but the perceived state of being uneducated or insufficiently uneducated. For the institution, an illiterate cannot use reading, writing, and calculation skills for his/her development or society's development. Similarly, and more acceptably, the term is defined by UNESCO (1978) as a state where a person cannot, with understanding, read and write a simple statement on his everyday life; and a functionally illiterate is a person who cannot engage in all those activities in which literacy is required for effective functioning of his group and community and also for enabling him to continue to use reading, writing and calculation for his own and the community development. The definitions above emphasize on learning (education) and the application of learning for personal and public development.

Educational illiteracy, therefore, is the inability of individuals to read, write, spell, and use mathematical, scientific, and technical skills to interpret, react, articulate and express their thoughts in specific situations. Hence, educational illiteracy does not only concern itself with the educational institutions where these skills are learnt, but also the quality of the content being learnt, the deliverers of the content, and the environment (infrastructure) through which these contents are delivered to develop and shape individuals' mind and knowledge as they face societal challenges (Loveless, 2023).

Theoretical Framework: The Structural-Functional Theory

The structural-functional theory which is also an approach to the study of Comparative Public Administration originated from the works of classical Sociologists and Anthropologists like Herbert Spencer (1820-1903), Emile Durkheim (1858-1917), and Alfred Radcliffe-Brown (1881-1955) in the late 19th and early 20th centuries, respectively. The theory was however modified by American

Sociologists Talcott Parsons (1902-1979) and Robert Merton (1910-2003) between 1954 and 1975 (Encyclopaedia Britannica, 2023; Atakpa, et al, 2021).

As a sociological theory at inception, structural-functionalism originally expressed that society is likened to the human body with various organs which work together for the functioning of the whole organism. Accordingly, these organs according to Spencer are the social institutions, patterns of beliefs, behaviours and cultures meant to meet the diverse social, economic, and political needs of the society. In essence, the sociological aspect of the theory explains that the social structure consists of institutions, norms, and values which play specific roles through the patternization of behaviours to ensure the stability and functioning of the society. To this effect, any dysfunction on the part of any of these social structures might result in the collapse of the society (Gangwar, 2021; Atakpa, et al, 2021).

Gabriel Almond (1911-2002) and Bingham Powell (1942-till date) particularized and transitioned the theory to the political enclaves (London, 2023). According to them, the political system consists of both structures and functions, which makes it easier to understand the political system and ensure its workability and stability. For them structure in a political system does not only refer to the traditional institutions like the executive, legislature, and the judiciary, but also the observable activities and behaviours which characterize the political system, and which also consist of regularities and patterns. Hence, structures in a political system include the characteristics of the political economy, the socio-political culture of citizens, and the administrative patterns of institutions of governance and agencies of the government (Jackson, 2023). Accordingly, functions are actions that are performed by specific structures to maintain the stability of the system and to keep it relevant. In fact, according to Ezeanya (2010), functions are the consequences of actions or behaviours by members or constituents of each structure. These functions are however those within the jurisdiction of the structure involved and which might be performed by different structures based on the stage of political evolution. Therefore, the theory emphasizes the specialization of functions by particular structures to avoid instability and overlap of functions in the political system.

The functions required to ensure the stability of the political system are divided into two; the input functions and the output functions. The input functions also referred to as the non-governmental functions or political functions are those involving the exchanges in the political context. They are usually performed by Non-Governmental Organizations (NGOs) and socio-political groups such as pressure groups, interest groups, political parties, etc. These functions include political socialization/recruitment, interest articulation, interest aggregation, and political communication. The output functions are those involving the direct exchanges between the government and the people. They include rule-making, rule application, and rule adjudication. Summarily, Almond and Powell conclude that though these output functions are not uniformly performed by similar structures in all political systems, the understanding of the structures and functions in a political system would provide details on how stability in such a system can be maintained. This understanding would also help in identifying and comparing the type of structures and their commensurate roles in different countries and cultures of the world (Jackson, 2023).

The theory is relevant to the study because it establishes an inextricable relationship between the stability of a political system to the activities of the structures of such system, which further determines the state of affairs of the system in aspects like agriculture, education, health, etc. In extension, it is the role of the political structures such as the executive, legislature, judiciary, and bureaucracy to maintain stability through their roles in policy making, policy application, and policy (rule) adjudication. Hence, ensuring widespread educational literacy is the function of both state and federal governments. This means that it is pertinent that educational illiteracy being a challenge in the country is salvaged through specific approaches of the executive, legislature, and judiciary, as well as other educational agencies established to oversee activities in the sector. For instance, the legislature can make educational reforms through the Acts of Parliament and also request the increment of budgetary allocations to the educational sector through its financial oversight functions. Likewise, the institutions of the executive like the diverse supervisory boards of education in the country can supervise the activities of educational

institutions to ascertain the quality of teaching and infrastructures of educational institutions and make reports to the Ministry of Education where necessary.

Overview of Educational Illiteracy between Nigeria and China

As earlier emphasized, illiteracy is a major factor hindering development in several climes of the world. Investment in education is a component for increasing Human Capital Development (HCD), thus, a country which invests properly and judiciously in education is likely to build strong, efficient and innovative manpower, which is an indelible prerequisite for development.

The analysis of the literacy levels in both Nigeria and China is determined by two factors which are also used in measuring literacy rates in all countries of the world. They are the data of the Literacy Index as provided by international organizations like the UN through UNESCO and the Mean Years of Schooling (MYS). According to UNESCO, the Literacy Rate of each country is determined by the number of persons aged 15 and above who can read and write, and understand simple sentences and statements about themselves or other persons. Accordingly, the MYS is determined using data from several persons with no level of education, those with incomplete and completed lower and higher secondary education, as well as those with incomplete and completed tertiary education. In this fashion, the MYS takes into consideration, the rate and spread of educational literacy amongst the population as well as the factors that may affect the completion of education in specific countries. Hence, it measures both number of years and the quality of education in respective countries. It is usually calculated every 5 years. The lower the MYS, the lower the spread and quality of education in a country and vice versa. The global average is 8.7 years with the highest being 15 years. An MYS below 8.7 years is therefore below average and literacy as well as the quality of education considered low in such a country (Education Policy & Data Center, 2021).

Statistically, the literacy rates of both countries are at extreme ends. China recorded a massive literacy rate of 99.83% of its 1.4 billion population in 2021 indicating a 4.71% increase from 95.12% in 2010. Nigeria recorded only 77.62% of its 213.4 million population in the same year, though this indicated a 13.9% growth between 2010 and 2021 (Global Data, 2023). In terms of the MYS, China recorded a 2.5 increase from 8.25 in 2010 to 10.75 in 2020, while Nigeria recorded a 1.1 increase from 6.8 in 2010 to 7.9 in 2020 (Tilasto, 2023; Our World in Data, 2023). It is thus shown that while China's educational literacy level topples Nigeria's in both literacy rates (measured by percentage) and MYS, Nigeria has recorded an appreciable improvement in literacy rate since 2010 but with lackadaisical growth in the MYS which takes into consideration both rates and quality.

As expected, the reasons for the poor level of literacy in the latter are numerous. According to Birabil & Ogeh (2020), the backwardness of Nigeria in literacy development is contingent on factors like value placed on paper qualification, poor planning, poor funding, poor educational infrastructures, inadequate classrooms and teaching aids, paucity of quality teachers, polluted learning environment, and academic fraud.

However, a comparison of the approaches adopted practically by these countries to curb illiteracy shall be made and conclusions drawn.

Tripartite Comparison of Approaches to Educational Illiteracy Reduction in Nigeria and China.

1. Comparison According to Structure and Pattern of Educational Institution(s) Administration.

All-inclusive (Holistic) vs. Specific Approach

The Nigerian system of administering tertiary education is quite holistic. Tertiary institutions are being established with no specific interest in a particular field, area or profession, rather a general academic institution is created which absorbs all available fields, areas and professions. This approach to university education makes learning seemingly intractable, skill acquisition inappropriate, and specialization incongruous especially for a developing country. The negative effect of this is overcrowding and understaffing which is one of the problems of tertiary education in Nigeria. For example, the University of Nigeria, Nsukka (UNN), has 15 Faculties and 106 academic departments, with over

35,000 students lectured by a meagre 1,700 academic staff. Statistically, this represents only 16 lecturers per department with multiple courses being handled by some of the lecturers. The University also offers 82 undergraduate programs and 211 post-graduate programmes (Linkedin-UNN, 2023). This holistic form of educational administration without specifications results in rather poor academic terrain, few teachers/lecturers handling many students, poor institutional care, admissions without due process and screening, and the production of unqualified graduates (Eze, 2022). For instance, to manage the problem of overcrowding, the majority of universities in the country are subdivided into campuses spread around the state where the university exists. This poses challenges for especially lecturers who usually have to travel to the location of these campuses outside the campuses where their departments are situated to deliver lectures. This exposes them to road travelling hazards, physical stress, and greater financial expenses (Ebuara, et al, 2020).

However, this is not the case in the Chinese tertiary educational administration. Each ministry is allocated a university which concentrates on the ministry's area of specialization. For instance, Hohai University is directly administered by the Ministry of Water Conservancy, while Dalian Maritime University is directly administered by the Ministry of Communications. The General Aviation Industry Corporation of China and China Ship-Building Corporation also manage a few universities. Of the 350 universities in China, some like the Hohai University, Nanjing, Tsinghua University, Beijing, University of Science & Technology, Hefei, etc., are well recognized globally for academic excellence. For instance, the Tsinghua University of Beijing which is observed to be vaster in natural, biological, environmental sciences and engineering is the best in Asia and also ranked 23rd in the global ranking of best universities in the world (US News & World Report, 2023). These universities deal directly or are well recognized in specific areas of specialization, hence enhancing academic propriety and ease in learning and skills adaptation.

2. Comparison According to Budgetary Allocations to Education

The high educational literacy rate is a function of massive investment in education. This investment is evident in the budgetary allocations and other financial provisions to the educational sector and institutions in a particular country.

From the Nigerian space, illiteracy is exacerbated by the meagre allocation to the educational sector. The educational sector is deprived of funding in the yearly budget, despite its large GDP. For example, in the tertiary education parlance, Nigeria has over 170 universities and 120 Polytechnics and Colleges of Education inclusive; yet, the allocation to the educational sector remains insignificant (see Atakpa & Akpan, 2022), especially for a country with low indices of literacy. In the 2021/2022 budget, educational sector expenditure decreased, despite the impacts of the pandemic on the sector. Total allocation to the education ministry (including statutory allocations) was just 5.8% of the total budget. This was less than the last 5-year average of 7%, indicating a step backwards in educational (literacy) development in Nigeria, which further depletes the quality of education in the country. The table below shows the educational spending in Nigeria as a percentage of budgetary allocation (total public spending) from 2015-2023.

Table 1: Educational Spending in Nigeria as a Percentage of Budgetary Allocation from 2015-2023

Year	Education Spending (%) of Budget	Annual Change
2015	9.26%	0.22% (from 2014)
2016	6.65%	-2.60%
2017	6.12%	-0.53%
2018	5.94%	-0.18%
2019	5.86%	-0.9%
2020	5.13%	-0.72%
2021	5.14%	0.01%
2022	5.39%	0.25%
2023	8.8%	3.41%

Source: (Macrotrends, 2023). Adapted from <https://www.macrotrends.net/countries/NGA/nigeria/education-spending>

Table 1 shows that education expenditure started declining from 2016 to 2020. However, gradual increases began in 2021 and hit a massive 3.41% increase in 2023 from a 0.01% increase in 2021. However, these allocations have not met the UNESCO recommendation of 15% to 20% of the respective country's public expenditure (UNESCO, 2021). This is adjudged as one of the reasons for the country recorded over 20 million out-of-school children and series of unresolved strike actions by educational unions such as the Academic Staff Union of Universities (ASUU), the Senior Staff Association of Nigerian Universities (SSANU), Non-Academic Staff Union of Educational and Associated Institutions (NASU), Academic Staff Union of Polytechnics (ASUP), National Association of Academic Technologists (NAAT), Colleges of Education Academic Staff Union (COEASU), etc. These strike actions which were more pervasive in 2022 has overtime in truncated academic progression in tertiary institutions, thereby, depleting the quality of Nigeria's educational environment (Oyeniran, 2023)

The Nigerian case as stated above is a spatial deviation from the situation in China. Since 1983, the Chinese government has attached great importance to the development of the educational sector with the percentage of education spending to the total budget not below 9%. Besides structural reforms, public spending on education increased considerably (Textor, 2022).

The table below shows the educational spending in China as a percentage of budgetary allocation (total public spending) from 2015-2023.

Table 2: Educational Spending in Nigeria as a Percentage of Budgetary Allocation from 2015-2023

Year	Education Spending (%) of Budget	Annual Change
2015	12.10%	0.22% (from 2014)
2016	11.89%	-2.60%
2017	11.59%	-0.53%
2018	10.76%	-0.18%
2019	11.23%	-0.9%
2020	10.53%	-0.72%
2021	14.03%	3.5%
2022	15%	0.97%
2023	17%	2%

Source: (Macrotrends, 2023). Adapted from <https://www.macrotrends.net/countries/CHN/china/education-spending>.

From Table 2, it is observed that the allocation to education in China's annual budget has not fallen short of 10% since 2015. Although the percentages from 2015-2021 did not satisfy the UNESCO recommendation, increases to 15% and 17% in 2022 and 2023 respectively indicate massive

improvements, especially in the face of global digital and technological advancement. A bulk of the country's investment in education is directed towards digital and technical literacy through diverse policies like the Education Informatization 2.0 Action Plan, and which has seen the country emerge as one of the leading countries in digitalization and manufacturing (Xu & Wang, 2023).

3. Comparison According to Pattern and Content of Learning

Traditional/Theoretical Approach vs. Digital/Technical/Practical Approach

The existential focus on theoretical as well as traditional approaches and methods of learning has deepened both the spread and quality of educational literacy in Nigeria. It is indeed undeniably conspicuous that the world is tilting towards digitalization and technicalization in the era of the Fourth Industrial Revolution (4IR) which in the educational terrain is characterized by the utilization of new technologies like Artificial Intelligence (AI), cloud computing, robotics, 3D printing, etc., to enhance the speed and quality at which new information and knowledge are generated and transferred (Sekiyama, 2020). Hence, countries of the world have instituted diverse policies, plans and strategies to adapt to the changing system. However, the majority of educational institutions in Nigeria from the primary to the tertiary level have not adapted to the 21st Century's use of ICT (which is a measure of technological development in the modern world) in transferring knowledge (Chidinma & Matthew, 2023). The deficiency in digital illiteracy is prevalent among both teachers and students. For instance, in 2019, only 11 federal universities could provide at least 2,000 computers for students' and lecturers' use (Statista Research Department, 2022).

The absence of a practical policy framework for the use of digital technologies in the nation's educational system is perhaps one of the reasons for more than 50% of the country's over 200 million population lacking digital skills. A similar case is pervasive in the aspect of technical education. For instance, Lawal (2022) noted that technical educational institutions in Nigeria are faced with challenges including dilapidated infrastructure, obsolete equipment, and unqualified teachers and instructors to meet up to the current industry skills, generally owing to poor policy framework, sectorial corruption, inadequate funding, and mismanagement of funds. Stemming from these issues, it is observed that normal workshop practice which forms over 60% of the standard of technical college curriculum as set by the National Board for Technical Education (NBTE) is fast deteriorating. In fact, between 2007 and 2017, over 45% of Nigeria's professionals including technical educators had migrated to other countries for better learning and working environment, owing to the government's inability to invest in practical digitalization and technicalization of education (NnaEdozie Thomas Foundation, 2023; Lawal, 2022).

China's approach to illiteracy reduction in this regard is more pro-digital and pro-technical. This is achievable through the institution of policies and strategies to ensure computer and technical skill acquisition by students and the general public. Though investment in digital and technical education had become vigorous in the late 20th Century, recent policies have proven to be more effective in the national coverage of digital and technical literacy in the country. For instance, in 2021, the country launched the "Action Plan for Enhancing Digital Literacy and Skills of the People" which was also included in the country's 14th Five-Year Plan. Digital education has become a national strategy in China (Wang, 2022). Previously in 2018, the Ministry of Education in the country had issued the Education Informatization 2.0 Action Plan which proposed to take education informatization as a key driver of education reforms. The Plan aimed to provide teaching applications to all school-age students, and construction of a digital campus in all schools, ranging from primary to tertiary schools (Yan & Yang, 2021). This has resulted in numerous strides in digital education in China as schools have produced more than 300,000 high-quality digital teaching resources including micro-lessons, teaching plans, courseware and classroom records, and the coverage of teaching material resources reaching over 60% in cities like Yancheng (Xu & Wang, 2023). Learning clouds have also been created to tackle the disparities in rural areas. Owing to these developments, China has within 20 years risen to the ranks of countries with massive digital strength, resilience and responsiveness as measured by the Digital Skills Gap Index (DSGI). Specifically, the country currently ranks 18th of 134 countries with a score of 6.7

while Nigeria ranks 103rd with a score of 3.6% (Wiley, 2023). Particularly, the investment in the digitization of education has had positive reverberating socio-economic impacts on the citizens and the country at large. For instance, there is an increase in the number of women involved in the digital economy with over 23 million female online shop owners, with 3.92 million from rural areas. This has to an extent bridged the income gap between both genders in the country. Improvements in digital literacy have also lessened the urban-rural gap in the country. Furthermore, 8 of the world's largest digital education companies are based in China with the digital education market grossing over \$44.56 billion in revenue in 2019, indicating a massive rise from \$10.03 billion in 2012 (Bolli, 2020).

Likewise, China has improved massively in the area of technical education. The country has the world's largest vocational and technical education system, featuring over 11,300 schools which enrol over 30 million students and 10 million graduates per year (Koty, 2022). Particularly, it should be noted that technical education in China does not only focus on expansion in size, but quality improvement. One of the measures adopted to strengthen vocational and technical education is the promulgation and implementation of the Vocational Education Law (1996 as amended) which is aimed to establish close connections and cooperation with enterprises in respective areas to cultivate talents for certain vocations in respective enterprises (Koty, 2022). In addition to this, students can participate in internships from matching enterprises during their studies and have the opportunities to become full-time workers at their chosen enterprises after obtaining their degrees, hence, mitigating the problem of youth unemployment.

Furthermore, China has formed over 1,500 education groups and alliances covering more than 45,000 member units. These have included enterprises, schools, industries and research institutions to conduct studies. Also, domestic vocational institutions have established over 24,000 internship bases with enterprises which are supported by incentives like land, loans, and tax reduction (Global Times, 2022). The country has also practically reformed the Scientific and Technological Progress Law of the People's Republic of China (1993 as amended) which aims to improve the measures to guarantee efficiency and effectiveness in science and technology together with a high level of self-reliance. This is why China is ranked 1st in the rankings of countries according to the manufacturing industry. The country makes over 28% of the total global manufacturing output which adds over \$4 trillion to the world economy annually (World Population Review, 2023).

Conclusion

The level and quality of education is one of the factors of development in the world which is necessary because inventions and innovations are products of knowledge about how it is generated and transferred. Hence, countries of the world have over time developed approaches to ensure the spread and quality of education to tackle its adverse, illiteracy. In the study, it is discovered that there is a huge disparity in the approaches to illiteracy reduction between Nigeria and China in terms of the structure and patterns of educational institution(s) administration, budgetary allocations to the education sector, and patterns and contents of learning. Specifically, it is discovered that Nigeria adopts the all-inclusive and holistic pattern of administering educational institutions, especially at the tertiary level, while China's pattern of administration about tertiary education is more specialized with each institution having a specific area of specialization and ministerial administration. This ensures easy accountability and administration of each institution, as well as vast specialization, in specific areas. Additionally, Nigeria's budgetary allocations to education since 2015 have fallen short of the UNESCO recommendation of 15%-20% of the total budget expenditure. This has resulted in other problems including inadequate learning facilities, poor infrastructure, poor lecturers' welfare, and intermittent industrial strikes in the educational sector. In China, though the allocations between 2015 and 2021 had not met the UNESCO standard, it is appreciable that such was not less than 9% of the total budget. The UNESCO standard however was met in 2022 and 2023 respectively, and has contributed to the increase in the spread and quality of education in the country. In terms of patterns and content of learning, the Nigerian system has not adapted to the 21st-century investment in and use of digital technologies in learning as the concentration is still heavy on the traditional and theoretical methods of learning. This is different in China which has

evolved over the years through the promulgation and strict implementation of policies for digital and technical educational development. Hence, the country has risen in the ranks of digital and technical literacy quantitatively and qualitatively, which has boosted its manufacturing sector. In essence, it is identified that the bulk of Nigeria's challenges towards illiteracy reduction generally lies in the poor policy formulation and implementation framework, coupled with others like inadequate funding, mismanagement of funds, public sector corruption, poor supervision of educational institutions, and unqualified or inadequate staff in educational institutions.

Recommendations

From the analysis above, the following recommendations are made;

1. Tertiary institutions should be established to focus on specific areas to ensure specialization, and expertise, amongst both instructors and students and also to reduce over-crowding in Nigerian tertiary institutions. For instance, tertiary institutions could be established in such manner as the University of Social Sciences; University of Natural and Biological Sciences; University of Engineering, etc.
2. Allocations from the national budget to the educational sector should be increased to at least 15% as recommended by UNESCO.
3. Provisions should be made for digital infrastructures like digital libraries, computer systems, projectors, and other gadgets in public primary, secondary and tertiary institutions. A board should also be established to supervise the usage, maintenance and management of this equipment.
4. Public technical and vocational colleges and institutions should be provided with the necessary infrastructure and tools for practical experimentation. Both federal and state governments should establish technical education boards to examine and supervise the usage, maintenance and management of this equipment.
5. Vocational education should be strengthened through the establishment of vocational institutions which should also issue certificates/degrees equivalent to conventional university degrees.
6. Government should ensure partnership between enterprises and vocational/technical institutions through a policy framework for the cultivation of talents and employment of qualified hands-on completion of studies.
7. The independence of anti-graft agencies should be strengthened to enable them to tackle corruption and mismanagement among public officeholders.

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