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Education for African Development in the Twenty-First Century Millennium

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Abstract

Education is one of the 17 Sustainable Development Goals (SDGs) that replaced the Millennium Development Goals (MDGs), which ended in 2015. As former UN Secretary-General Ban Ki-Moon observed, there is no "Plan B" because there is no "Planet B." Education must therefore be functional in outlook and practice if African development is to marshal and anchor the other Sustainable Development Goals in the realization of the African dream. Education is the transmission of life and culture from one generation to the next (Adeyinka, 1990), and it inculcates the habits, attitudes, and skills that make an individual an acceptable member of society. This paper examines the place of education, in its various dimensions, in achieving sustainable development in Africa.

Keywords:
Africa, Capacity Building, Development, Sustainability

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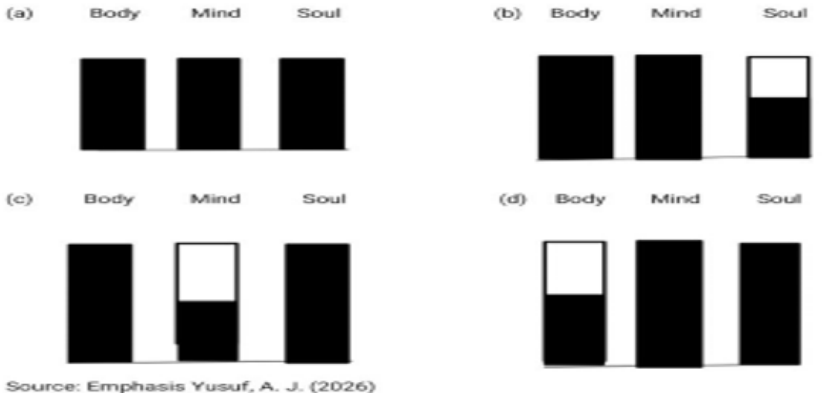
Background of the Study

Education for development is the cornerstone of African development in the twenty-first century and beyond. The condition of schools in most African states during the colonial period and after has largely remained poor. A field trip to Kaura Namoda Local Government Area, Zamfara State, Nigeria, in 2023 confirmed the poor condition of education in the villages visited. Similarly, visits to Togoland in 1994 and again in 2020, in the Lamakara district, found that most village schools (écoles) were in a poor state; learning took place under the shade of trees rather than in classrooms.

A comparable visit to the Tolon, Daboya, Savelugu, Diare, and Tali districts of Northern Ghana revealed the same poor condition of schools and education. This situation needs to be improved to enhance functional education for the transformation of the continent in all aspects of life. More significantly, Africa's rural areas lag seriously behind in functional education. Parents in these areas often lack the financial means to sponsor their children's education. As a result, many of these children grow up to remain rural farmers, in the case of boys, or future housewives, in the case of girls. Plato and Johann Heinrich Pestalozzi both emphasized free education for all as the exclusive preserve of the state. Education should encompass peace, democracy, development, and social justice, as set out in international and regional human rights instruments, in order to strengthen universal commitment to human development, Africa included. This paper therefore examines the place of functional education in sustainable development in twenty-first-century Africa.

Conceptual Framework

Education is a prime motivational mover toward development in any social formation. Quality education for all, on equal terms, helps to promote lifelong learning opportunities for everyone. It trains learners in an all-round manner – physically, intellectually, and psycho-emotionally, as well as spiritually and socially – to become acceptable members of their society and of humanity. Education is also the transmission of culture from one generation to the next (Adeyinka, 1990). According to Adewumi (1987), education is the imbibing of habits, attitudes, and skills (HAS) in a learner, to make the learner a useful member of society. Education is also the transmission of life by the living to the living; this transmission can be found in the school curriculum and its breakdown into syllabi and schemes of work, through which teachers (the living) instruct learners (the living) in a functional manner that enhances sustainable development in Africa. Education is also the transformational training of the learner's body (physical), mind (intellectual), and soul (spiritual), so that the learner becomes useful to both self and society over a lifetime of learning. The diagram below illustrates three facets of the learner, no aspect of which should be lacking in human development.



Source: Emphasis Yusuf, A. J. (2026)

50Figures A, B, C, and D represent four different learners. The education of the learner in Figure A is complete. The learners in Figures B, C, and D are incomplete in mind, soul, and body, respectively; each lack one area of development, both in school and afterward. Therefore, education can be defined as a process of facilitating learning and the acquisition of knowledge, skills, values, beliefs, habits, creativity, self-efficacy and attitudes, aimed at helping an individual become a contributory and useful member of society. Gagdi Jibrin (2025).

Bloom (1956), in his Taxonomy of Educational Objectives, argued that the three domains of educational objectives – cognitive, affective, and psychomotor – must be fully developed to provide learners with the quality education needed to achieve the capacity building that Africa currently requires for sustainable development, in line with best practices found in developed societies.

At a summit, Saraki (2003) stated:

> *Education holds the key to our future, both as a state and as a people. We recognize that if we are to overcome the challenges of development, special attention must be paid to education. In particular, efforts must be made to raise the quality of our education to a standard that prepares our children for the challenges of life.*

The challenges identified by Saraki included insecurity, poverty, migration (especially among nomadic Fulani pastoralists), resistance to positive change such as quality education, and poor access to modern educational equipment. Africa has an area of approximately 30,321,000 square kilometers, making it the second-largest continent in the world. The distance from its northernmost to its southernmost point is about 8,476 kilometers, while its east-west extent is about 7,568 kilometers. The continent is almost bisected by the equator, extending from roughly 37° 20' N to 34° 40' S. Its most important islands include Madagascar, Zanzibar, Pemba, the Comoro Islands, the Cape Verde Islands, the Canary Islands, São Tomé and Príncipe, Fernando Póo, and the Madeira Islands (Adeola et al., 2006). Africa is bounded to the north by the Mediterranean Sea and

Western Europe; to the east by Saudi Arabia, the Red Sea, the Gulf of Aden, and the Indian Ocean; to the west by the Atlantic Ocean; and to the south by the South Atlantic and Indian Oceans. The continent comprises 54 countries recognized by the United Nations, with inter-lacustrine societies and language families that include the Khoisan, Nilo-Saharan, Afro-Asiatic, Niger-Congo, Chadic, Kwa, and Senegambian language families.

Africa was among the most enslaved and colonized continents, and this history of imperialism and colonization contributed to the continent's underdevelopment after roughly a century of contact with the West (Rodney, 1972; and other underdevelopment theorists including Paul Baran, Samir Amin, Celso Furtado, and Andre Gunder Frank). The Trans-Atlantic Slave Trade also undermined African development, as did the Scramble for and Partition of Africa (1884–1885). By 1960, following the colonial enterprise, seventeen African countries had achieved political independence, only to be ushered into a form of neocolonialism, as described by Kwame Nkrumah of Ghana and other scholars, which further undermined African development. Today, many societies remain extremely poor while a few are extremely rich; millions of people across Africa, Asia, and Latin America live in abject poverty, a condition often attributed to a lack of development. Since this paper's central discussion concerns quality education for African development, it is useful to clarify some conceptual issues regarding development itself. Rostow saw development as the progressive movement from a traditional society toward a stage of high mass consumption of goods and services. Hoogvelt described development as the process of induced economic growth and social change within an internally stratified world.

Rodney (1972) viewed development as an overall social process dependent on a society's increasing capacity to master the laws of nature (science) and apply them in the production of tools (technology), enabling control over the environment to meet present and future needs; development, in this sense, cannot be seen purely as an economic affair, since other segments of society are also involved. Jimoh (2026) similarly describes development as the improvement of people's living conditions. Recent scholarship confirms that quality education remains central to unlocking the other Sustainable Development Goals across the continent (Singh, 2022; Olubiyi, 2024), even as significant structural barriers to achieving Goal 4 persist in much of sub-Saharan Africa (Nephitaly & Olateju, 2025). African development, in this sense, signifies the progressive movement of the continent toward positive transformation in its political, economic, socio-cultural, scientific, technological, industrial, religious, and educational life, as well as in information and communication technology, with a focus on the seventeen Sustainable Development Goals. Sustainable development, correspondingly, is development that endures – a capacity-building process, undertaken by the current generation of Africans and those yet unborn, that will build and rebuild Africa in a process of renaissance.

Research Objectives

The research objectives were as follows:

i. To enhance and develop learners' scientific dexterity and technical know-how,

enabling them to replicate, innovate, and invent tools that meet society's immediate and future needs in the area of sustainable development in Africa.

ii. To ensure gender equality through quality education, bringing women into the mainstream of continental African development in all aspects of life.

iii. To achieve peace, justice, and strong institutions in each African society, in support of sustainable African development in all aspects of life.

Research Questions

i. How can learners' scientific skills be enhanced and developed to achieve the technological know-how needed to innovate, replicate, and invent for sustainable development?

ii. How can gender equality be enhanced to build a more progressive and prosperous society?

iii. How can peace, justice, and strong institutions be achieved in each African society in support of sustainable development in all aspects of life?

Methodology

The study applied a qualitative research approach, drawing on journal articles, magazines, newspapers, textbooks, and internet sources.

Literature Review

This paper's central topic, education for African development in the twenty-first century, is examined here under three sub-headings: science and technology education; gender equality and education; and peace, justice, strong institutions, and education. Each is discussed in turn, drawing on relevant literature.

Science, Technology, and Education

Kuhn (1970) described a scientific revolution as a non-cumulative developmental episode in which an older paradigm is replaced, in whole or in part, by an incompatible new one. Smith (1977) argued that the major achievements of the Scientific Revolution of the sixteenth and seventeenth centuries came chiefly in fields most influenced by Greek ideas and methods – astronomy, mechanics, and medicine. The cosmological view of the late Middle Ages had been built on a synthesis of the ideas of Aristotle and Claudius Ptolemy, the greatest astronomer of antiquity, together with Christian doctrine. In the resulting Ptolemaic, or geocentric, conception, the universe was seen as a series of concentric spheres around a fixed, motionless Earth at its center – known as the Ptolemaic system, or the earth-centered universe.

Rosen (1984) described the Copernican system as follows:

> *Using elaborate astronomical and mathematical calculations, Copernicus argued that the universe consisted of eight spheres, with the sun motionless at the center and the sphere of fixed stars at rest in the eighth sphere. The planets revolved around the sun in the order of Mercury, Venus, Earth, Mars, Jupiter, and Saturn. Copernicus explained the daily rotation of the earth on its axis and its yearly journey around the sun.*

Copernicus's sun-centered model displaced the Ptolemaic system of earth-centeredness. Casper (1954) wrote on the discoveries and views of Galileo Galilei (1564–1642), another key figure of the Scientific Revolution, who invented the telescope to observe heavenly bodies and was the first European to use it in this way, opening the gateway to modern astronomical science. Johannes

Kepler, a contemporary of Galileo, was equally significant. According to Casper (1954):

> *Johannes Kepler, a mathematician and astrologer, was a key figure in the rise of the new astronomy. Building on Tycho Brahe's vast astronomical data, Kepler discovered the three laws of planetary motion, which both confirmed and modified the Copernican theory – theories that displaced the Ptolemaic and Aristotelian ideas of uniform circular motion and crystalline spheres moving in circular orbits.*

Kepler's work improved on the Copernican model of a sun-centered universe, confirming that Copernicus had been right, while simultaneously refuting the Aristotelian theory of an earth-centered universe.

Westfall (1993) examined the life of Isaac Newton, emphasizing that:

> *With a single law, that of universal gravitation, Newton was able to explain all motion in the universe. His great synthesis of the ideas of his predecessors created a new picture of the universe – one in which the universe was viewed as a great machine, operating according to natural laws.*

Newton, working from around 1666, invented calculus as a means of calculating rates of change and conducted experiments on the composition of light. His work on the law of universal gravitation is well known in the history of science as Newton's three laws – the law of universal gravitation, the second law of motion, and the third law, often summarized as action and reaction. The seventeenth century also witnessed conflict between science and religion, alongside the emergence of scientific societies in London, Italy, France, and elsewhere in Europe, as well as developments in medicine. Galen's influence on anatomy, physiology, and the study of disease was considerable, and William Harvey's discovery of the circulation of the blood was a landmark achievement. Technological revolutions have likewise been important to human development, from antiquity to the modern computer age.

Bostrom (2006) observed:

> *Some eleven thousand years ago, in the neighbourhood of Mesopotamia, some of our ancestors took up agriculture, beginning the end of the hunter-gatherer era. Improved food production led to population growth, causing average nutritional status and quality of life to decline below hunter-gatherer levels. Greater population density led to accelerated cultural and technological development; standing armies became*

> *possible, allowing the ancient Sumerians to embark on unprecedented territorial expansion.*

These developments were among the earliest beginnings of technology. In 1448, Johannes Gutenberg invented the movable-type printing process in Europe, making possible the mass production of texts such as the Bible. Gutenberg's invention became a major factor fueling the Renaissance, the Reformation, and the Scientific Revolution, and helped give rise to mass literacy.

The ancient Egyptians were also prominent in this technological history, notably in metalworking, the calendar, and writing; between roughly 6000 and 4000 BCE, the great pyramids were built. The Oldowan, Acheulean, and Sangoan cultures likewise exhibited various ancient technologies (Yusuf & Ibrahim, 2006).

Gender Equality and Education

Gender equality has become a global issue due to persistent inequality between men and women, often attributed to patriarchy. The British jurist Henry Maine, in his 1861 work Ancient Law, argued that the original basis of society was the family, and that the patriarchal system dated back to the Old Testament and the Roman legal tradition in which the conception of patriarchy culminated. Maine held that patriarchy had existed among classical societies from very early on, possibly close to the origin of humanity, though he could not fully explain what led to its adoption. Maine's argument was challenged by Bachofen, who believed that matriarchy preceded patriarchy as the classical form of social organization – a view that Tylor and Bastian described as an "essential and universal stage in cultural development" (as cited in Ikpe, 2009). Engels (1891) traced the origin of patriarchy to the establishment of private ownership of land and slaves. He argued that an earlier age of primitive matriarchy, marked by gender equality and communal ownership of property, was overthrown in what he called "the world historical defeat of the female sex," as men became increasingly concerned with acquiring and controlling property. Engels's account was later criticized by feminists such as Sacks and Nicholson as lacking sufficient evidence. Herbert Spencer, drawing on social Darwinism, argued that patriarchy arose because "only fathers could adequately protect women and children," linking male dominance to a Darwinian notion of the survival of the fittest (as cited in Ikpe, 2009).

Turning to the political sphere, Mark Twain (1835–1910) remarked on women's role in public life:

> *I should live to see the time come when women shall help to make the laws. I should like to see that whiplash, the ballot, in the hands of women. As for the city's government, I do not want to say much, except that it is a shame – a shame. If women had the ballot today, the state of things in this town would not exist.*

Twain was pointing to the failures of governance that he believed women's political participation could help correct. Today, gender inequality in politics remains a significant issue worldwide, with the political sphere still largely dominated by men.

Chimamanda Ngozi Adichie (2014), in We Should All Be Feminists, wrote:

> *I would like to ask that we begin to dream about and plan for a different world. A fairer world. A world of happier men and happier women who are truer to themselves. And this is how to start: we must raise our daughters differently. We must also raise our sons differently.*

Adichie emphasizes the need to teach equality to both boys and girls from an early age, discouraging discrimination and fostering mutual respect between the sexes – the foundation, in her view, of a fairer world.

Dime (2004) similarly emphasized the centrality of women to society:

> *The maker of the world and the one who sustains it is not a man. She is a woman, the womb of mankind. Hence, the exclusion of women – more than half of the population – from policy or from the gains of society has brought disaster to it.*

From this perspective, if the creator is understood as feminine, the womb of mankind, then gender equality is beyond dispute; sustainable development in Africa can only be achieved through the full inclusion of women in all aspects of life.

Evans (1998, p. 3), in Feminist Theory Today: An Introduction to Second-Wave Feminism, noted:

> *In 1972, the United Nations declared 1975 to be the International Year of the Woman. Among the world's women, the reaction was not entirely positive – was this an admission that every other year had been the year of the man?*

Women have historically endured what Evans calls "the year of the man," and many have fought for women's rights as human rights, including the suffragists who campaigned for the franchise; the history of feminism as a protest against women's oppression is not confined to any single country, culture, or era. Aristotle's views on women were, notably, less progressive than those of his teacher Plato.

Aristotle held that women were in some sense incomplete:

> *A woman was an unfinished man. In reproduction, woman is passive and receptive, whilst man is active and productive, for the child inherits only the male characteristics. The woman was the soil, receiving and bringing forth the seed, while the man is the sower.*

This Aristotelian view was challenged by Plato, who, while not a feminist theorist in the modern sense, observed:

> *Women have exactly the same powers of reasoning as men, provided they receive the same training and are exempted from child-rearing and housekeeping. In Plato's ideal state, rulers and warriors are not permitted family life or private property.*

Plato recognized that the burdens of childbearing and child-rearing prevented women from participating fully in developmental programs across all spheres of life on equal terms with men – a burden that, if lifted, would allow women to accomplish what men can, and often more. Jean-Jacques Rousseau, in The Social Contract, famously wrote that "all men are born free and equal, but everywhere they are in chains," a statement that resonates with the position of many marginalized groups in society. No review of this literature would be complete without noting the range of feminist theories, including radical feminism, liberal feminism, socialist feminism, cultural feminism, womanism, and African feminism.

Tong (2018), summarizing radical feminist theory, wrote:

> *Women's oppression is the first, most widespread, and deepest oppression. Radical feminists see the oppression of women as the most profound feature of world culture because it is found across all races, ethnicities, and cultures, and they believe that society must be changed at its core to dissolve patriarchy, not merely through legislation.*

Radical feminists, including Mary Wollstonecraft, Chimamanda Ngozi Adichie, Karen Sacks, and Linda J. Nicholson, among others, argue that the oppression, suppression, and discrimination of women must end.

Peace, Justice, Strong Institutions, and Education

African history is deeply rooted in its cultural heritage, and the relative peace of Africa's pre-colonial past should not be overstated, though it was real within the continent's many empires, kingdoms, and smaller polities. The colonial enterprise disrupted this relative peace throughout the continent. Chinua Achebe (2006), drawing on W. B. Yeats's poem "The Second Coming," captured this disruption in the lines describing how "things fall apart" and "the centre cannot hold." This image captures the broader disruption of Africa's pre-colonial culture of peace, a disruption that persisted through the colonial period and into the post-colonial era. The high level of insecurity across the continent today is considerable, from ethnic conflicts such as those between the Tutsi and Hutu, to communal clashes between Tiv and Fulani communities in Taraba State, Nigeria, the Konkomba–Dagomba conflicts in Northern Ghana, religious terrorism linked to Boko Haram in Nigeria and al-Shabaab in Kenya and Somalia, the conflicts in South Sudan, the Central African Republic, and the Democratic Republic of Congo, and the political instability reflected in military coups between 1960 and 2026, including recent uprisings in Niger, Mali, Burkina Faso, and Guinea.

Bashar (1998), as cited in Haruna (2003, p. 21), stressed:

> *It is clear that African indigenous cultures, customs, traditions, and civilizations had emphasized not only the value and significance of peace in society, but also the necessity of ensuring peaceful co-existence and harmony among the various groups that lived in a common community, and between them and their neighbours. This premium placed on peace, and on peaceful co-existence in pre-colonial Africa, stemmed from an awareness of the negative consequences that followed the loss of peace, both within a society and in inter-group relations.*

This underscores that peace is essential to humanity and human existence, and it is central to all aspects of sustainable development in Africa. Peace, justice, and strong institutions form the cornerstone for achieving the seventeen Sustainable Development Goals. As Ban Ki-Moon, UN Secretary-General from 2007 to 2016, observed, there is no Plan B because there is no Planet B – the world is humanity's only home, and peace is therefore essential.

Olafimihan (2007, p. 9) noted:

> *African Traditional Religion teaches and propagates peace. The Yoruba attached great importance to the possession of a good character (iwa rere), embodied in moral attitudes such as love, loyalty, faithfulness, kindness, honesty, self-discipline, hospitality, justice, generosity, and chastity. The divinities and the ancestors expect all adherents to promote peace in institutions of learning and in the country at large.*

Damilola (2006), as cited in Olafimihan (2007, p. 9), similarly observed:

> *Islam is a practical religion, and the word "Islam" derives from the Semitic root "as-salam" (shalom in Hebrew), meaning peace. Two related words, "salam" and "sakinah," are used in the Qur'an to describe peace, with "salam" the more commonly used; in its primary sense it denotes safety, security, freedom from fault or blemish, soundness, well-being, and peacefulness.*

Peace, in this sense, is a resilient foundation for human existence, extending in a layered way from the individual to the family, community, nation, region, and, finally, the world.

Paradigm of the Paper

The main thrust of this paper is discussed under the sub-headings below, concerning the place of quality education in the selected topical issues central to African development, and its role in capacity building across these areas.

Scientific and Technological Education

Education is a crucial gateway to human development in contemporary Africa. Science education must be encouraged at all levels of Africa's educational system, enabling learners to apply scientific knowledge to invent, replicate, and innovate as needed.

Capacity building in this area supports creativity in electrical engineering, agricultural mechanization, mechanical engineering, and industrialization, all of which can advance the continent.

Brühlmeier (2004) noted:

> *Pestalozzi believed that the wrong type of education is the reason for many of society's problems, and that a good education is the only real cure for society's ills.*

Pestalozzi's thesis underscores that science education must provide learners with sound, reliable scientific knowledge, equipping them with the capacity for creativity needed to meet best practices found in advanced societies globally. Technology, understood as applied scientific knowledge used to produce goods and services for human benefit, depends on a society's capacity to invent, innovate, and replicate. As Rodney argued, development in any society depends on an increasing capacity to master the laws of nature (science) and apply them in the production of tools (technology), enabling control over the environment to meet present and future needs – precisely the kind of technological education Africa needs today for capacity building and development. Quality education in technology can equip learners with the capacity to replicate, invent, and innovate in tools and machinery, much as George Stephenson invented the locomotive engine during the Industrial Revolution in Britain, alongside James Watt's steam engine and Samuel Crompton's spinning mule. Such technological education equips learners with the technical knowledge needed to mainstream the continent into development.

Pestalozzi further stated:

> *Education should develop the powers of the three H's – the head, the heart, and the hands. He believed this would create moral individuals, capable of knowing right from wrong and of acting on that knowledge, so that the well-being of every individual could be improved and each could become a responsible citizen. He believed that empowering every individual in this way was the only way to improve society and bring peace and security to the world.*

Pestalozzi's framework of developing the head, heart, and hands offers a systematic way of imbibing technological education, equipping learners with the capacity to invent, innovate, and replicate knowledge in service of African development.

Agricultural Mechanization and Mechanical Engineering Education

Africa possesses abundant human and natural resources, a considerable blessing. Technical education in agricultural mechanization and mechanical engineering is essential to promoting food security and achieving Sustainable Development Goal 2, "Zero Hunger." Agricultural development can also help produce the raw materials needed to facilitate industrial growth across Africa, while commercial agriculture can be enhanced and sustained through quality agricultural education.

Sustainable Energy Development

Africa has come of age as a potential global powerhouse. Quality education must train learners in electrical and electronic engineering, building the capacity needed to ensure reliable power supply in each country. This will support growth across sectors of the African economy, including industrialization and transportation, both of which depend on electrical engineering, as do agriculture and manufacturing. Bala (interview, Kankara Local Government, Katsina State, Nigeria) noted that Kano, Nigeria's economic hub, has around 800 industries, of which only about 300 are functioning, largely owing to unreliable electricity supply.

Bright and Hyuha (2015, pp. 46–47) observed:

> *Functioning infrastructure forms the backbone of a growing industrial economy, and for African countries to transition from agriculture and resource-based economies to modern manufacturing and industry, electricity is desperately needed.*

Michael Faraday and André-Marie Ampère's work in electrical engineering helped provide the power that fueled the Industrial Revolution in Britain from around 1750, followed by the United States (1850), Germany (1850–1890), Japan (1890–1913), and China (from the 1970s and early 1980s), each of which used electrical energy to drive industrialization. Africa today has considerable potential sources of power, including major hydroelectric facilities such as the Akosombo Dam (Ghana), the High Aswan Dam (Egypt), the Kariba Dam (Zambia), and the Kainji, Jebba, and Shiroro Dams (Nigeria), among others. What is currently needed is quality education in electrical energy, to build a skilled workforce capable of supporting African manufacturing and industrialization.

Entrepreneurial and Vocational Education

The current state of entrepreneurial and vocational education has not adequately met the continent's needs for skill acquisition in this area. Quality education is essential to producing learners capable of realizing the aspirations of Africa's business community – learners who become national entrepreneurs, in the mold of Rockefeller or Carnegie in the nineteenth-century United States, rather than merely intermediaries for foreign interests. Such learners can help transform the socio-economic development of their countries and the continent. Entrepreneurial and vocational education must emphasize practical skill acquisition, in line with best practices in developed societies, and can provide meaningful employment opportunities for Africa's many unemployed youths.

Gender Equality and Education

Gender equality is the fifth of the United Nations' 17 Sustainable Development Goals, aimed at achieving gender equality and empowering all women and girls. Chimamanda Ngozi Adichie, in We Should All Be Feminists, emphasized the need for equal rights and status for both sexes – a fairer world achievable through quality education for girls and women, enabling them to help mainstream Africa's socio-economic development.

As the United Nations (2017) states:

> *Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous, and sustainable world. Providing women and girls with equal access to education, healthcare, decent work, and representation in political and economic decision-making will nurture sustainable economies and benefit societies and humanity at large.*

Recent continental assessments show this progress remains uneven: the 2023 Africa Gender Index recorded steady but incomplete gains toward gender equality across the continent (African Development Bank Group & Economic Commission for Africa, 2023), while a comparative review of the UN's Agenda 2030 and the African Union's Agenda 2063 found a persistent gap between the two frameworks' rhetorical commitments to women and the outcomes achieved on the ground (Gebrihet et al., 2024). Every emerging African nation should therefore ensure, as a matter of policy, that all girls and women of school age have the opportunity to acquire quality education equipping them with the skills needed in their chosen fields, enabling them to contribute fully to African development.

Peace, Justice, and Strong Institutions

Peace, justice, and strong institutions constitute Goal 16 of the Sustainable Development Goals. Peace studies should be included in school curricula, with quality education in peace studies and conflict resolution helping to produce learners who act as ambassadors of peace, in Africa and globally. Peace is an antidote to underdevelopment; it was part of Africa's pre-colonial heritage, and no development can take place without it. The continent has faced a long series of conflicts – political, religious, and socio-economic – both during and after colonial rule, and this pre-colonial legacy of peace has deteriorated. Recent regional assessments continue to identify governance deficits, insecurity, and weak institutions as central obstacles to achieving Goal 16 across the continent (Economic Commission for Africa, 2024; Centre for the Study of Violence and Reconciliation, 2025).

Sofowote (2003) offered an insightful account of the "culture of peace":

> *It is easy to recognize the culture of peace as the state of being in which societies attain harmony and development in co-existence and interaction, and individuals, in their environment, generate further waves of goodwill and progress.*

Quality education must work to restore Africa's pre-colonial legacy of peace in support of sustainable development. The continent, and indeed the world, needs peace today, and quality education can help instill in learners the values associated with this legacy, forming part of curriculum building for sustainable security and continent-building. Values, skills, customs, and traditions of peace should be imparted to learners through quality education; classical philosophies can be taught, including the Chinese teaching that:

With righteousness in the mind, there will be beauty in the character. With beauty in the character, there will be harmony in the home. With harmony in the home, there will be order in the nation. With order in the nation, there will be peace in the world.

Ideas central to a culture of peace should be cultivated in learners to sustain peaceful engagement in their lives, in support of sustainable African development today and in the future.

Recommendations

Learners receiving quality education should, where linked with foreign direct investors in their fields of study, be directly involved in on-the-job practicals, inventions, and innovations as part of capacity-building. In Japan's development, for example, based on Western economic theory, Japanese trainees were attached to Western technicians who taught them how to perform the work directly, rather than simply observing as onlooking labourers, under agreements between the Japanese government and Western technicians. This offers a model that African schools and education systems can draw on, not as a matter of technology transfer in name only, but as substantive skills transfer. On this basis, the following recommendations are made:

i. Learners should be directly involved in Foreign Direct Investment partnerships where such agreements exist with technicians, participating actively rather than merely observing foreign experts.
ii. Where scientific and technological knowledge acquisition is linked to a foreign investor, the practical, on-the-job participation of African trainees must be ensured.
iii. Technology transfer to learners should go beyond the assembly of imported technology, and should include instruction in how to invent tools and machines and how to use them.
iv. Where foreign investors are involved in entrepreneurial and vocational skills acquisition, programs must enable learners to manufacture and produce goods and services themselves.
v. In the area of invention and innovation, African participants must be directly involved on the job wherever Foreign Direct Investment is required.
vi. Government should enhance access to modern educational equipment for schools.
vii. A conducive learning environment, with adequate classrooms, must be provided.

Conclusion

In summary, African development must be pursued through quality education grounded in practical, inclusive skills training. Where foreign direct investment is involved, instructors must ensure that learners are taught directly what to do and how to do it. A Chinese adage captures this well: "What I see, I remember. What I hear, I forget. What I do, I understand." This is a sound educational philosophy, one capable of sustaining lifelong learning outcomes and supporting the capacity building needed for Africa's social and economic transformation in the twenty-first century and beyond – ceteris paribus.

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