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ACHIEVING RAPID INDUSTRIALISATION AND DEMOCRATISATION IN AFRICA: THE ROLES OF EDUCATION AND TRAINING

By

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INTRODUCTION

Mr Vice-Chancellor, distinguished guests, ladies and gentlemen, it is with great joy that I welcome you to this inaugural lecture entitled, **Achieving Rapid Industrialisation and Democratisation in Africa: The Roles of Education and Training**

I would not be standing here today were it not for the love between my mother and father who were farmers, my first set of teachers and the ones who gave me the opportunity for the formal education they did not have. I am highly indebted to my parents. I am also highly indebted to all my teachers especially the late Rev. Fr. J.F. Stephens, the first principal, St. Malachy's College, Sapele, the secondary school I attended. I am grateful to: my larger family for supporting my university education; Our Lady of Perpetual Light Parish, the Catholic community, Obafemi Awolowo University(OAU) and all the Religious and Diocesan priests that I interacted with during the past few decades through the parish, for nurturing me spiritually; Rubber Research Institute of Nigeria (RRIN), Benin and the University of Akron, Akron, Ohio, USA, for supporting my postgraduate studies; the Social Science Council of Nigeria and the Ford Foundation for research support; and the International Development Research Centre(IDRC), Canada, for conference sponsorship. I am especially indebted to OAU and all those who were instrumental to setting up Technology Planning and Development Unit (TPDU), where I have the opportunity to carry out my research. I appreciate my colleagues and students in the Unit and Faculty of Technology. How can I thank the Lord Almighty sufficiently, for his goodness to me? It is impossible! Let me just say: thank you Lord for your gifts of love, faith, hope, my wife and children and friends. May your gifts and the work you inspired me to do bless your holy name for ever.

When I commenced research and teaching as a Research Fellow II on October 10, 1986, in this great University, I had been bothered for years by a particular question. The question was: **Is the BLACKMAN the same human being as the CAUCASIAN and the ASIAN?** The

audacity of curiosity and the challenge to find answer or answers to that question was the principal factor that motivated me to pursue a career as an academics.

I had completed a bachelor's degree programme in Agricultural Biochemistry and Nutrition from the University of Ibadan, Ibadan in 1976 and both M.S. (1981) and Ph.D. (1985) in Polymer Science (Science of Rubbers and Plastics) from the University of Akron, Akron, Ohio, U.S.A.

How was one with academic qualifications in pure sciences going to contribute to answering the question that had bothered me for a while? I did not know. Nor did I worry about it.

However, King Solomon in appealing for divine inspiration prayed (Ws. 7:15-17):

> **May God grant me to speak as he would wish and conceive thoughts worthy of the gifts I have received, since he is both guide to Wisdom and director of sages; for we are in his hand, yes ourselves and our sayings, and all intellectual and all practical knowledge.**

King Solomon prayed for all who desire to search for the knowledge that would glorify God. By God's grace, I received the gifts of conceptual skills and combining many areas of knowledge – science, engineering, technology, arts, etc., in carrying out my curiosity-driven research.

HISTORY

Many people and societies operate without any sense of history. Consequently, man has been thinking and doing things as if the world began today. This is unfortunate because the world has a written history of over 5000 (five thousand) years. Indeed, archaeological research has extended man's knowledge of his past over millions of years. It is for man's low sense of history that man continues to repeat his mistakes and suffers avoidable pains. If man would increase his sense of history, he would be at peace with himself, his neighbor, environment and his creator.

I accepted to part-take in teaching a course entitled: Technology Policy, during the Rain Semester of 1985/86 academic session. One of the books that I picked up from the Hezekiah Oluwasanmi Library, Obafemi Awolowo University, was entitled: **Turning-Points in Western Technology: A Study of Technology, Science and History.** It was written by D.S.L. Cardwell (1974). In it, I read the portion which said: **Europe began the modern era with almost total dependence on the Chinese, Indian and Islamic cultures – the Great Medieval Civilizations.** That finding shaped my research methodology. The revelation that European nations were less developed than some Asian and North African and Middle East nations in the past drew my attention to history. Consequently, I became very interested in reading the history of nations. I read many experiences. However, this lecture presents a few typical cases.

The British experience

The region now occupied by modern Western Europe (France, Britain, Spain, Portugal, Italy Belgium, Germany) was the ancient Gaul. It was harnessed into the Roman empire in 55 B.C. The region enjoyed over 400 years of the peaceful reign of the empire before the western portions of the empire was attacked by Germanic tribes - Vandals, in 406 A.D (Carrington and Jackson, 1954). Thereafter, many other tribes attacked and invaded the islands of England; the blend of European tribes became Britons. Before they became one homogeneous group, it was one kingdom after the other – Northumbra, Mercia, Wessex, Kent and others. The various kingdoms in the island metamorphosed into a nation in the tenth century (Brooke, 1968). England was colonized by the Normans in the period 1066-1154; the Aglo-Norman feudalism in England lasted 90 years. However, it was in the period 1340-1400 A.D., in Chaucer's England that for the first time, England emerged as a distinct nation, no more a mere oversea extension of French-Latin Europe, the Angevin union, and the English language became born and accepted as a vehicle of teaching and legal proceedings. The English language is a product of the Norman conquest of Britain (Trevelyan, 1948).

The period 406-597A.D. is referred to as the Dark Ages of British history because there is no history recorded about human life in the area occupied by modern Britain during the period. Bede's Ecclesiastical History and the Anglo-Saxon Chronicle, Incorporated, which were the two authoritative written history sources were not written before 730 A.D. (Carrington and Jackson, 1954).

In the Middle Ages (450-1450), institutions and corporate life flourished and grew while the individual was held of little account(Trevelyan, 1948). Feudalism was the characteristic institution of Europe in the Middle Ages. The economic system was based on agriculture, and manoral system. The lords of manors forced serfs to work for them without pay. The serf was not considered a freed man by the law (Trevelyan, 1948).

In Tudor's England (1483-1603), as many as twenty thieves were usually executed in one occasion (Feiling, 1951; and Carrington and Jackson, 1954). It was the time of great enclosure. They pulled down houses, and towns were destroyed, leaving only the sheep pen and the clergy's house (Eton, 1977). People sold their pieces of land because they were victims of fraud, violence and other unjust manoeuvrings. The poor and wretched were forced to leave their homes without alternative housing arrangements.

European Kings lived above the law. The Kings believed they were only responsible to God. James I. of England in his first parliament in 1604 said in relation to the king's power that:

The state of monarchy is the supreme upon earth for kings are not only God's lieutenants upon earth and sit upon God's throne, but even by God Himself they are called gods... It is sedition in subjects to dispute what a king does in the height of his power. I will not be content that my power be disputed on *(Carrington and Jackson, 1954).*

There were therefore long and fluctuating struggles between European Kings and the people. As the situation in England degenerated, there arose three parties to the struggle for power: the king, Charles I (1625-1649) and his supporters; the parliament (representing the people)

and the army (Trevelyan, 1948). The first part of the civil war that ensued was fought 1642-1646.The second part was fought in 1648.

General Oliver Cromwell and his men became tired of the bloodshed and in December 1648 sacked the King and 150 members of his parliament, leaving a few lords and Commoners – the Rump, which ruled Britain the following four years, 1649 – 1653 (Carrington and Jackson, 1954).

Cromwell and his brother-in-law, Ireton, became part of the parliament – a Diarchy, then ruled Britain. On the order of Cromwell and Ireton, parliament appointed 135 commissioners to try the King for treason. The trial began January 20, 1649 and ended January 27. The King was sentenced to death and executed January 30, 1649 (Carrington and Jackson, 1954).

The Rump having disposed of the king abolished the House of Lords and the Church of England and declared Britain a commonwealth – a nation in which kings, lords and bishops are unnecessary. The Rump was transformed into a Council of State. The Council was unpopular because it forbade church service and cathedrals were desecrated. The Council also forbade Christmas festivities. There were no holidays. Universities were purged. There were many do-not-dos.

General Cromwell died at the young age of 59 years in September 1659; he ruled Britain for ten years. At the time Cromwell died, he had made some headway in purging the army of some of its fanatical and extremist elements. Consequently, the desirable disbandment of the army, the Restoration of the monarchy and the rule of law were effected without bloodshed.

The English people had the belief that monarchy was essential to the restoration of the parliament and the rule of law because they had been inextricably interwoven by centuries of continuous growth and by inherent association of ideas (Trevelyan, 1948). Charles II became the king of Britain in 1660. With the restoration of full parliament in 1660, its necessary accompaniment, party government and democracy were restored too.

The conflict between the executive (the king) and the legislature representing the people which reached anti-climax in the reign of Charles I, continued after the restoration and Charles II enthronement as the King of Britain. The conflict was settled by the Revolution of 1688 in which the executive was made subject to the nation and the law.

In the parliamentary system the cabinet led by the Prime Minister, is dependent on a majority vote of the House of Commons with all the cabinet ministers seated in the parliament. **The parliamentary system requires for its proper functioning, two rival parties to criticize each other and to offer alternative governments** (Carrington and Jackson, 1954). George III ((1760-1820) was able to manipulate the parliament by bribing members of the House of Commons whom were later known as the **rotten borough,** for being very corrupt.

During a period of over 1000 years, the productivity of the European including the English in ancient Gaul was reflected by primitive tools like hoe, axe and draught-oxen (Davies, 1969). In the twelfth century, every rich man in England built himself a castle. Many people in England were starving during the twelfth century. Every man robed another; the church was not spared. All tilled the land but yields were very poor (Trevelyan, 1948). The wretchedness of the ordinary man left him burning with the zeal to sacrifice himself to attain the perfection he could imagine but not see. That is why that era is popularly known as the Age of Chivalry in European history. Nowadays, the world is usually at peace and man laments when nations declare war. However, in Medieval Europe (Europe before 1500A.D.), people were perpetually at war and man rejoiced when nations declared peace.

England in 1776 was largely a land of farmers and petty traders. That explains why Adam Smith in his book, **An Inquiry into The Nature and Source of Wealth of Nations,** written in 1776, described England as a nation of shop-keepers. The farmers then produced corn, wool and meat for their own consumption and only export excess in good years.

The population of the people in 1700 was about 7 million, government revenue was about £7million (seven million pound sterling) a

year (Trevelyan, 1948). London was then the only city in Great Britain, and it was the market to which all goods were shipped. England and other European nations were still village-nations and each village grew its food and most villagers still wore clothes made in homes. That was after over 1700 years since the people in the islands of England started sharing a common history.

Britain achieved the first modern Industrial Revolution (IR) in the period 1770-1850 (Gregg, 1971). According to Inman (1984), Capitalism as an economic philosophy has evolved over seven overlapping phases. They are: Pre-capitalism (before 1500A.D), Mercantile capitalism (1500-1800), Free or deregulated capitalism (1750-1890s), Industrial Capitalism (1860-1920s), Finance capitalism (1890s-1930s), Regulated capitalism (1930-present) and Responsive capitalism (1915-present). Thus, it was the free (deregulated or laissez-faire economics or individualism) phase that was the prevailing economic philosophy in Europe especially Britain at the heart of the British IR. Mercantile capitalism advocated self-reliance of nations – sell as much as possible, buy as little as possible, and store silver and gold in vaults as wealth. Adam Smith advocated free or deregulated capitalism, arguing that the wealth of nations comes from free trade unencumbered by government regulations – laissez-faire economics.

By the 1790s, the IR had transformed the industrial frontiers – the midlands and north of England, but slum housing, street crimes, child labour and other undesirable developments were the most obvious predicaments that the IR brought majority of people. Politicians had just accepted the principles of Adam Smith that tempering with the natural laws of economics does harm than good to commerce and the well-being of the people. This became an obstacle to regulation of business activities in Britain. The inhuman conditions created by free or deregulated capitalism in Britain directly produced the labour party and socialism.

The political neglect and the anxiety consequent to the economic depression of the 1870s and 1880s led some people to search for more radical solutions. Socialism which had been espoused and elaborated by Robert Owen (1771-1858) in the 1820s and 1830s, was articulated into a more scientific and resolute ideology by Karl Marx (1818-1883). It

was Marx who first called Westerners capitalists in describing the horrible experience of workers in the early days of the Western industrialisation. The German government exiled him from Germany and pressurized the French and Belgium governments to expel him from Paris and Brussels respectively. Marx then moved to London in 1849 and wrote from his desk in the British Museum, his revolutionary masterpiece, **Das Kapital** in 1867.

The **Febian Society** in 1884 was one of the several socialist groups formed to fight against the horror of deregulated capitalism in Britain. It was unique in its respectability, disavowing violent revolutionary means and attracting intellectuals. The characteristic activities of the society were teaching, speaking to any group that would listen, preaching that socialist cooperation was destined peacefully and constitutionally, to replace capitalism and that the economic aspect of democratic ideal is socialism. By 1900, the Febians and other socialist groups and labour unions formed the Labour Representation Committee which metamorphosed into the Labour Party in 1906 in England.

General Cromwell administration (1649-1658) produced a written constitution in which England (Anglican), Ireland (Catholic) and Scotland (Anglican) were to elect one parliament. The United Kingdom made up of England, Wales, Ireland and Scotland did not enjoy peace from that forced-embrace till recent when Tony Blair as Prime Minister granted different parliaments for Ireland and Scotland. By that single decision, Tony Blair solved a many centuries-problem and converted the unitary system into a quasi-federal and democratic political system.

The American experience

Though the United States experience has its uniqueness, it still has all the characteristics of others western nations. Following the discovery of America by Columbus in 1492, and the discovery of gold and silver in the New World, America was considered a land of wealth and great opportunities. The lure of big profits, political loyalty and the search for better life and liberty induced individuals, the king of England and settlers themselves to found colonies in America (Baldwin, 1969).

The start of lasting English colonization began when a group of English merchants and investors applied for royal charters to authorize enterprise in America. King James issued a single charter to them as the Virginia company in 1606. Their settlements were to be governed by a royalty appointed council of Virginia in London. Early Virginia was a land of small farmers which later became one large plantation because it was devoted to one crop, tobacco.

Over the period of about one century later, a tide of emigration, one of the greatest folk of wandering in history swept from Europe to America (United States Information Agency, 1965). The consequence was the immigration of European people with their varied ideals, customs, and national characteristics, and the import of cultural traits to the New World across the Atlantic came in successive groups.

Englishmen, Frenchmen, Germans, Scots, Irishmen, Dutchmen, Swedes and Africans willing and through force, took their habits and tradition to the New World. The result was a new social pattern which though resembled European society in many ways, had a character that was distinctly American (United States Information Agency, 1965). The new continent was remarkably endowed by nature but trade with Europe was vital for the import of articles the settlers could not yet manufacture. It was in this regard that the coastline served the immigrants well. The experiences of the colonists in Europe, the separateness of the colonies, together with the distances between the settlements and other things prevented the development of a centralized and unified government. Instead, each colony became a separate entity, marked by a strong individualism. By 1646, more than a dozen languages were spoken along the Hudson River.

Later, there was one feeling among the colonies. It was the feeling of being American (Baldwin, 1969). Whereas the British wanted to limit or forbid the expansion of American manufacture and to subject Americans to the strict controls of British institutions, the Americans did not want someone else's institutions and controls however favourable to them but theirs. Events and processes soon demonstrated that the two positions were fundamentally different and were indeed a matter of life and death.

On September 5, 1774, the original thirteen colonies (Virginia, New York, Connecticut, Pennsylvania, Massachusetts, Rhodes Island, Maryland, New Jersey, North Carolina, South Carolina, Vermont, New Hampshire and Delaware) held the first Continental Congress at Philadelphia, to consult upon the unhappy state of the colonies, due to the efforts of the Crown to control the colonies and encroach on their rights. That Congress produced an Association of colonies.

There were bloody hostilities between the Americans and the royal troops in April 1775. Consequently, the second Continental Congress was held in Philadelphia on May 10, 1775. The mood of the congress was signified by the stirring declaration of the causes and necessities of taking up arms, the joint product of John Dickinson and Thomas Jefferson (United States Information Agency, 1965):

Our cause is Just, our Union is perfect. Our internal resources are great, and, if necessary, foreign assistance is undoubtedly available.... The arms we have been compelled by our enemies to assume, we will employ for the preservation of our liberties, being with one mind resolve to die free men rather than live as slaves.

That was the Article of Confederation.

As the declaration was being debated, Congress took the militia into continental service and appointed Colonel George Washingon, Commander-in-Chief of the American forces. His stalwartness and his composed and dignified manner marked him a masterful man. He was perceived as an example of perfect moral and physical courage.

On June 7, 1775, Richard Henry Lee of Virginia, in pursuance of the feeling of his colony had introduced a resolution declaring in favour of independence, alliances and American federation. Five members were set up to prepare a formal declaration. Jefferson, from Virginia House of Burgesses, then thirty-three, who had come to Philadelphia with an already established reputation was chosen to draft the declaration. The draft did not rest on particular grievances, but upon a broad base of individual liberty which could command general support throughout American. It reads (United States Information Agency, 1965):

We hold these truths to be self-evident, that all men are created equal, that they are endowed by the Creator with certain inalienable rights, that among these are life, liberty and the pursuit of happiness. That to secure these rights governments are instituted among men, deriving their just powers from the consent of the governed; that whenever any form of government becomes destructive of these rights, it is the rights of the people to alter or abolish it, and to institute a new government, laying its foundation on such principles, and organizing its powers in such form, as to them shall seem most likely to effect their safety and happiness.

The Americans declared their independence July 4, 1776. The Revolutionary War or War of Independence dragged on for eight years, 1775-1783. Assisted by France, Spain, Netherlands, other European nations, the Americans won the war and became a truly independent nation.

Winning the war did not automatically create the United States of America that we know today. Following the war with Britain, the pressures arising from the struggle with England had done much to change the attitudes of the Americans towards unification. Colonial assemblies had rejected the plan for a union. But in the course of the Revolution, mutual aid proved advantageous and the fear of relinquishing individual authority in some spheres had lessened to a great extent.

The Articles of Confederation drafted by the committee headed by John Dickinson of Pennsylvania in June 1776, recommended to the original thirteen states for adoption on November 15, 1777, and finally ratified by March 1, 1781, only gave the Continental Congress complete control over foreign affairs and some control over state relations. The Articles of Confederation clearly stated that each state retained its **sovereignty, freedom** and **independence.** Congress could exercise only such limited powers as were assigned to it; the states had all the rest, including the all important right of taxation. If Congress wanted money, it might requests it from the states.

Good relationships between the Confederation government of the United States and her former allies were continually imperiled by the inability

of the American Government to pay its foreign debts. The financial embarrassment of the confederation government was always acute (Hicks, et al., 1970:103). The United States had incurred a debt of over $40million (forty million dollars) during the war. About $6million had been borrowed from France, and about $2millioin from other foreigners. The remainder was owed to citizens of the United States. Unfortunately, the means by which the Confederation government could raise money to discharge its duties were strictly limited. Some funds were borrowed from Holland for use in payment of interests on the foreign debts.

Americans having tried Confederation government and found out themselves, that the system was not suitable for realizing their common objectives, decided to gather and decide the form of government that would enable them achieve their common objectives. Some authors called the period marked by the thoughts and activities aimed at transforming the Confederation government into a stronger national government, the federal era. The most important development of the period was the production of the America/Constitution – a federal constitution.

Congress at the end of the Convention moved to end its own existence by referring the Constitution to states to ratify. In response, virtually all the states organized ratifying conventions. Rhodes Island which did not send delegates to the Convention did not organize ratifying convention. North Carolina rejected the Constitution. These two states did not ratify the Constitution till 1789.

The old Congress looking forward to the ratification of the Constitution, ordered the states to choose presidential electors, senators and representatives and set the first Wednesday in March 1789 as the date for the new Congress in New York, the temporary capital of the United States.

With quorums obtained, the electoral votes were counted. This is how George Washington was elected by the electoral college, as the first President of the United States and John Adams as the first Vice-President. By April 30, the President elect had arrived at New York. He traveled part of the route on horseback and the inauguration took place. The new

government was not fully launched that day because all the necessary legislation still had to be passed in order to make the new government functional.

George Washington, the first President of the United States, enjoyed the confidence of his contemporaries to a degree many public leaders cannot achieve. The fact that his good judgement and rugged honesty would be at the command of the new government during the experimental period of the nation allayed the fears of virtually all Americans of the time. His father was educated in England but George Washington who did not have the privilege of education, had limited education. Inheritance and marriage made him rich. As an administrator, he was wise in his choice of advisers, acted decisively and kept abreast of his duties. As a statesman he was far sighted and wise.

Party politics began almost immediately after the adoption of the Constitution. In the first and second presidential elections of the United States, George Washington received all electoral votes – unanimous decisions. Washington retired from politics in 1796.

George Washington had hoped to prevent the growth of parties. However, George Washington Secretary of the Treasury, Alexander Hamilton had created the impression that Washington's government had programmes designed to benefit the commercial people that the other people were soon in opposition. The central government was soon perceived as one meant to serve the interest of the businessmen and thus arouse the deep resentment of the farmers.

Thomas Jefferson won the 1800 presidential election; he beat John Adams who had succeeded George Washington in 1796. Jefferson called his administration the **Revolution of 1800** - the transfer of leadership in government from representatives of business to those primarily interested in Agriculture – the Republicans. Jefferson's concept of the ideal government is probably: **government of the people and for the people, but by the educated.**

The election of 1820 found the Americans almost free of partisan strife. Republicans had won all the elections from 1800-1820. The

Federalists' party which in its hay days ministered mainly to the needs of the commercial classes by this time only existed in memory. Manufacture now mattered more to the North than commerce, and Republicans not Federalists had enacted the protective tariff law of 1816 (Hicks, et. al., 1970).

Thereafter, bitter factionalism within the dominant party, the Republican party, split it into National Republicans (today's Republican Party) and Democratic Republican Party today's Democratic party.

Following the Revolutionary War, the rapid expansion of the West soon made the nation well aware of an impending conflict between the North and South. The issue at stake was whether slavery in the United States was to be a temporary or a permanent institution. The pro- and anti-arguments peaked in 1860 with the election of President Abraham Lincoln (1809 – 1865) as the sixth President of the United States. There were thirty- three states in the Union at that time: Eleven States in the South seceded from the union – they were bent on sustaining slavery and the North – twenty-two states, were against slavery. A civil war ensued – the American Civil War 1861- 1865. The more industrialised North won the war and kept the nation intact. Abraham Lincoln was assassinated as the president who worked to stop slavery in American.

By 1800 more than ninety percent of Americans lived on farms or tiny villages; these farms and villages formed rather thousands of different economies rather than one economy (Bartlett, et al., 1969). Large southern planters and merchants on the Atlantic coast carried on substantial trade with Europe, primarily Britain. The subsistent farm, however, was the characteristic unit of the American economy. The father and his wife and children spent most of their time producing the basic necessities of life: food, fuel, clothing and shelter.

Americans displayed fully the versatility of an educated people. The New England States (Maine, New Hampshire, Vermont, Massachusetts, Rhodes Island and Connecticut) and Pennsylvania, were the first to establish public school systems to educate all young people. It was also in these states where sound and systematic education had been practiced longest

and where it was most developed that the greatest manufacturing development occurred first.

At the end of the nineteenth century Americans looked back on the thirty-five years after the Civil War (1861 – 1865) with amazement. The entire nation had been transformed in their life times. All around them were huge new cities, large population, a bewildering array of new machinery, a vast railroad network and thousands of new factories, mills and mechanized farms(Bartlett, et. al., 1969).

In the United States, **laissez-faire** liberalists who wanted absolute freedom argued that free markets and individuals working on the basis of self-interest and self-initiative were natural. The function of government is not to check individual greed or further the privileges of any special group but to protect private property, contractual rights and freedom to compete. Following the rapid industrialisation of the nation, corporations soon rose to dominance. Corporations also soon began to merge to form trusts. Business firms began to form cartels which restrict production and raise prices.

Men found out quickly that they could no more make it on their own, others were dependent on organizations, and others waited outside factory gates for a chance to work for daily wage.

Victims of bad business practices sought relief through legislation. Farmers wanted the rates charged by railroads controlled, others wanted monopolistic corporations which frustrate competition outlawed, labourers sought regulations against very poor wages and very long working hours, child labour, etc.

State governments were the first to respond; they regulated railroad charges. The federal government followed with various regulations.

The 1930s Great Depression led to the introduction of many business regulations in attempt to revive the economy, because the ideology of **laissez-faire** was impotent in dealing with the problems associated with the depression (Inman, 1984).

Westward expansion, mass immigration, racial and ethnic antagonism and the transformation of the economic order all conspired to frustrate the simple application of democratic ideas. **The nation at a time seemed a world of organized degraded serfs run by a plunderous and tightly knit plutocracy. The continual clash between the serfs and the plutocrats engulfed almost everyone (Mowry, 1958).**

In 1900, majority of Americans including women in all states, black men in the southern states, Indians, unnaturalized immigrants, still could not vote. Women could not vote in the United States till 1920 (United States Information Agency, 1994). Moreover, political parties suffered from corruption and greed. **The American political parties – the Democratic party and the Republican party, were referred to as parties that had no principles or distinct tenents, though they had certain war cries, organization, interest enlisted in support of getting government patronage** (Norton, et al., 1983). **The period 1877 – 1900 in American history is referred to as an era that witnessed the decline of the presidency.**

What is the status of the American democracy today? Journalist, Jules Witcover (2003), who had chronicled American presidential elections for more than forty years had compiled a ringing indictment of the current system in the book, **Now Way to Pick a President.** The subtitle of the book, **How Money and Hired guns Debase American Elections,** pinpoint what the author considered as the twin evils of politics. Money and the restless pursuit of it are the driving force of American politics. Money and the restless pursuit of it are the driving force of American democracy today. Hired guns – political consultants of different types determine who becomes the presidential candidate and who becomes the president.

The Japanese experience

The Japanese people claim that the origin of their nation dates back to 660 B.C. although more objective sources point to 300 B.C (Hall, 1971). This is why the Japanese government celebrated the 2,600th anniversary of the nation with great publicity in 1940. It is believed that the

Japanese people derived most of their culture from the civilization developed in ancient times in China, and the people came from China, Korea and others south-east Asian nations (Reischauer, 1970). The Japanese state of the sixth century was mentioned as a tribally divided people in Chinese record. Japan as such, is a younger nation compared to Korea. The period before the end of the seventh century is designated as the transition period while the period, eighth through the first half of the nineteenth century is referred to as the experimental period.

Japan like China was ruled for a long time by dynasties – line of kings. Fujiwara, kamkura and Ashikara, were some of the dynasties up to the sixteenth century. Succession was a serious problem in Japan; throughout the first half of the sixteenth century, Japan continued to be in serious confusion. That was the situation when the Japanese had their first encounter with Europeans.

The Portuguese were the first to enter Japan in 1543. Christian Missionaries introduced Christianity into Japan during the period 1549 – 1551. Confucianism and Buddhism had been introduced into the nation in the sixth century. The Japanese government executed some missionaries and native Christians in 1593 and expelled all other foreigners at about 1613, before the nation went into seclusion (Hall 1971).

Japanese ancient history is marked by a series of famine years. Peak periods of crop failure in 1675, 1680, 1732, 1783 – 84, 1787 and 1833-37 gave rise to some 20 recorded famines (Hall, 1971) Under this condition, the population was the scape goat. The series of famine years in the more rural areas brought the popular mood in the Tokugawa regime to the breakpoint and peasant disturbance mounted.

By the 1850s, the Tokugawa Shogunate problems became more political than economic. The nation was facing increasing foreign pressure to open up to the outside world. The internal and external pressures combined to break down feudal structures of their regime.

The military administrators (the sumarais) in Japan in the seventeenth the century mainly had military training, but the Tokugawa regime had special thirst for learning. Consequently, the sumarais in the

period cultivated a balance between learning and military training. The city and rural population also shared in the Tokugawa's drive for literacy.

Science and technology up to the Tokugawa period in the nineteenth century remained primitive. Technology remained artisan; the more commonly used agricultural mechanization instruments were draft animals, plows and hoes. Land remained the most important resource.

After many trials, the United States in 1854 through the threat of her naval fleet forced Japan to open her ports to American ships and trade. When the American Naval officer, Commodore Matthew Perry entered Edo Bay in Japan, on board the steam frigate Susquehanna in 1854, most of the awestruck Japanese had never seen such a vessel much less a whole flotilla (Time Magazine, 1983). The Japanese quickly realized that the time had come for learning from others.

Japan quickly signed a series of forced treaties from 1854 – 1858 with America and other Western nations. This led to the subtle change of government popular known as the **Meiji Restoration** of 1868 in Japan. That regime quickly made changes in the structure of government and educational system. By 1875, there were some 600 Western experts hired by the Japanese government and some 3000 foreign advised were invited into Japan between the signing of fundamental treaties and 1890.

Japan's modern economic growth may be placed in the 20 years period 1886-1905. In the early 1880s raw silk, tea and rice accounted for over two-thirds of Japanese exports. However, by 1905, more than half of Japanese exports was machine-made. Japan was the first major power to recover from the global depression of the 1930s. Japan was then producing enough goods to use currency devaluation as an effective tool in her offensive drive for control of international trade (Hall, 1971).

In no area of reform did Japan move more quickly and purposively than in developing education for the Meiji leaders quickly realized that education is the most important instrument for modernization. Yet the question as to the form of education to adopt was not an easy one to deal with. Reactions followed two main lines – education based on the philosophy of search for knowledge throughout the world, or one meant

to inculcate the spirit of loyalty and dedication to the state. German political theory of statism became the prime rationale for the new constitution of 1889.

The Japanese search for national identity in the face of Western influence went through three distinct phases – from the eager all out advocacy of Westernisation to assimilation and modification, to a return to certain aspects of Japanese tradition. This is the normal sequence of borrowing. Of the three phases, it is the first that is characterized by the slowest growth rate while the third promotes the fastest growth.

When the Japanese were in the first phase, there were Japanese who came to detest their own past and values and said that Japan must be reborn with America as the mother and France as its new father. Western ways for many became a compulsive fad, as Japanese avidly put on Western-styled suits and hats, and grew out their hair, sported watches and umbrellas. The nation as a whole rapidly adopted Western material culture sometimes with thoughtless avidity. Railroads and telegraph lines were pushed through the countryside, new styles of architecture were adopted for government buildings and factories.

The second half of the 1920s marked the beginning of extremism in Japan. A 1925 legislation was linked to a peace preservation bill which enlarged the powers of police over freedom of speech and assemblage and marked a new stage in the control of dangerous thoughts. Mass political movement had to work against strong odds in Japan in the 1920s. The movements faced two types of obstacles – coalition of elites itself and its reluctance to share political power with a mass electorate; and the manner in which the Meiji constitution was placed at the centre of sovereignty above the political arena and protected the organs of government decisions from popular control. These prevented mass interest from influencing national decisions.

The year 1931 stands as a turning point in Japanese history. That is because it was in September that year that the Japanese army over-ran southern Manchuria, China, committing the government to a course of direct action on the continent of Asia and ultimately rejecting the international relations which had come into being during the 1920s.

The Japanese action was the common approach most human societies show military prowess – military expansion and digressing from domestic problems. Sometimes, it is seen as a demonstration of frenzy ultra-national spirit and expectation of prosperity through foreign expansion and of solace through the achievement of an integrated welfare state (Hall, 1971). There were demands for change at home and abroad.

Japan in 1941 was more or less what the Japanese themselves called **defense state** in which the nation was drawn together for the purpose of defence. In that state, the Meiji Constitution remained intact to protect the vested interest of the established elites. The military establishment became the most powerful vehicle for the spread of nationalist-militarism thinking in Japan.

As part of the full-scale military operations in Manchuria, China, the Japanese military boys assassinated many people and attacked many places in Japan to create a national crisis so as to take-over power on May 15, 1932. The take-over attempt failed but it had a lasting effect. The Japan-China conflict lasted till the end of World War II in 1945. As part of the Japanese expansionist/imperialist plan, Japan also attacked and occupied Korea.

In Europe, the World War II had broken out in 1935 and the initial German success matched early Japanese success. With the fall of the Netherlands and France in June 1940,many Japanese were convince that the Axis powers (Germany, Japan and Italy), were sure to win in Europe; the time was ripe for Japan to create her self-sufficiency in Asia.

The Japanese in late 1940 through the Foreign Ministry, Matsuoka, signed the tripartite pact which forged a military alliance among Germany, Italy and Japan and gave Japan recognition for her supremacy in East Asia. The tripartite treaty merged European and pacific problems.

The United States had been supplying Japan, iron and oil – very important materials in the production of arms. In the summer of 1940, President Roosevelt as a result of Japan's move into French Indo-China, permitted the existing US-Japan trade treaty to expire and placed limited restriction on the sale of strategic goods to Japan. When Japan moved

into Indo-China in the summer of1941, America, Britain and Holland placed a total embargo on all exports to Japan, thus cutting off Japan's essential oils, steel and rubber supplies. To the Japanese, this was unacceptable (Hall,1971).

Japan, without warning, attacked Pearl Harbour on December 7, 1941. The US lost 7 battleships, 120 aircrafts and 2400 people. This made the US to become part of the Allies determined to crush Japan. The Japanese also overran the Philippines, captured Hong Kong, Singapore and Indonesia. By March 1942, the Japanese troops were in New Guinea. In May, they had occupied Burma.

Between 1941 and 1944, the Western Allied Powers were primarily engaged in Europe. The Allies in Summer 1944 faced Japan and by June 1944 they had captured Saipan and March 1945 Iwo Jima. The movement converged at Okinawa in May 1945.

The Allies began systematic bombing of Japanese cities in late 1944. The incendiary attack on Tokyo on March 10, 1945, was estimated to have killed about 100,000 persons. On August 6 the US troops dropped a second bomb on Nagasaki. Against the continued protest of the military, the Japanese emperor on August 10, 1945, accepted the unconditional surrender demanded by the Allied Powers.

The Allied Powers occupied Japan between, 1945 and 1952, 7 years. The Allied Powers occupation of Japan is one of the most remarkable chapter in world history. No occupation other than one of outright conquest has been so dedicated to political reform. Moreover, only a few societies have been thoroughly made over in so short a time as was Japan during the years of occupation.

Japan in the summer of 1945 was a nation totally exhausted both physically and morally. From the China war in 1931 to 1945, it was estimated that 3.1 million Japanese died; 800,000 civilians lost their lives. Thousands of homes were destroyed. There was acute food shortage, farmers were making large profits. Civilian morality was completely lost. The people were emotionally and intellectually bewildered, having been fed and indoctrinated with highly – exaggerated wartime propaganda and

hyper-nationalists values, all of which collapsed with Japanese unconditional surrender.

The programme to which Japan was subjected as from 1945 was largely developed in the United States. Its execution was headed by the Supreme Commander for the Allied Powers (SCAP), General MacArthur, an American General. The programme had three major aspects: demilitarization, democratization and rehabilitation.

Under the demilitarization aspect of the programme, Japan was stripped of all its wartime gains and obliged to abolish the institutional supports on which the military establishment rested. Japan losts its empire: Manchuria (part of China), Korea, Taiwan, Sakhalin, and the Kuriles; Okinawa and the Bonin Islands were placed under American trusteeship. The Japanese armed forces were destroyed and Ministries of Army and Navy, all war industries, air transportation and even the Japanese merchant marine had to be abolished for a while.

To eliminate persons who had participated in Japanese expansion, the SCAP ordered purge of some 180,000 individuals from positions of leadership and education. A war-time crimes trial brought to the public prosecution 25 leaders presumed to have been most involved in war-time atrocities and responsible for the outbreak of war. Leading the list of 7 persons who were hanged was ex-premier Tojo.

As regards the democratization programme, state Shinto Shrines were cut off, Shinto based moral courses were stopped in Japanese schools in order to purge Japanese of the traditional dogmas upon which ultra-nationalism had flourished. The emperor was obliged to take to the radio to deny his divinity claims, because the Japanese had been indoctrinated that the emperor descended from heaven directly; he has no human origin.

The Allied occupation established a new constitution in Japan. The new constitution which was put through as an amendment of the Meiji Constitution in 1947, altered fundamentally the political structure of the Japanese, creating a truly representative form of government in which the locus of sovereignty was firmly placed in the hands of the people. **The SCAP believed that the American presidential system was less**

responsible to the people than the British parliamentary system. Consequently, the new Constitution established a cabinet responsible to electorate on the British model (Hall, 1971).

Occupational reform was also directed toward the economy. Efforts were made to discourage concentration in the economy. Anti-monopoly legislation was passed to forbid re-combination or merger. Labour unions were given support and encouraged to counterbalance the power of government (Hall, 1971; and Reischauer, 1970).

There was also land reform. The problems of tenant-farming and absentee landlordism were attacked. All absentee owners were obliged to sell their paddy land holdings bigger than 2½ acres (~1ha). Cultivator-owners were allowed to retain up to 7 ½ acres (~3ha). The collection of rent in kind was virtually eliminated.

There was also reform in the Japanese education. The reform was aimed at decentralising the state educational system, though the educational ministry was retained. A 6-3-3-4 system culminating in a university curriculum of general education was introduced. Local school boards were given power over portions of the curriculum. The reform eliminated the moral courses and introduced social studies. Modified history textbooks set forth a new pluralistic viewpoint. New subjects like political science were introduced.

By 1948, the nature of the occupation changed. The fundamentals of American policy in Japan also changed because the adoption of communism in the former USSR and China brought the COLD WAR into EAST Asia. American needed a friend in East Asia. Hence, Japan, the former enemy became a major ally. The occupation plan then changed from demilitarization and democratisation into reconstruction and rehabilitation.

The Japanese society, a military and state socialist one, was apparently converted into an efficient and democratic system in a period of 7 years. In the long run, Japanese post-war transformation could not

have been possible had Japan not had a long era of modernization which preceded World War II (Hall, 1971).

The Chinese experience

The Chinese claim that their origin dates back to 4000 B.C., but more objective sources point to about 1000 B.C., though there were separate local cultures each developing on its own as early as 2500 B.C. in the same region (Ebehard, 1950). Thus, China as a nation is more than 3000 years old. China was ruled by many dynasties till 1911 when she became a republic. Internal struggles continued while Chinese experienced famine. The Americans freed the Chinese from Japanese domination and occupation at the end of World War II which ended in 1945. Following the withdrawal of the Japanese, the Nationalist party, Kuo Min Tang(KMT) and the Chinese Communist party (CCP) led by Mao Tse-Tung(now called Mao Zedung) had to fight it out. The CCP won and it together with other minor democratic parties formed the government of the People's Republic of China (PRC) in 1949 (Stokes and Stokes, 1975). The Nationalists in annoyance withdrew to Taiwan. This is the origin of mainland China and Taiwan as separated brethrens.

In 1949, the Chinese economy was in chaos. The Russians on whom China had depended for a long time had quarreled with them and the Russians had stripped Manchuria, the most built-up city of everything. The infrastructure was in ruins and the currency was worthless. *Let the people walk on two legs; Let the native skills and local materials supplement modern technology,*

The Chinese used the resource they have in abundance – *people.* said Mao Zedung (Stokes and Stokes, 1975). Mao probably meant to link the learning efforts in the economy including the artisans/craftsmen/ agricultural activities and the learning efforts in educational institutions. Everyone in Chinese communes worked together. The Great Leap, 1958-1961 was an aftermath of the Mao Zedung economic philosophy. China is today the flowering-plant being admired by all. It must be remembered that it was the Great Leader, Mao Zedung who established the root-system of the flowering plant beginning in 1949.

Observations about Development Experiences

(i) Development time is traditionally very long

The development process – achieving industrialisation and democratization traditionally takes a very long time, about 2000 (two thousand) years (table 1), irrespective of culture type. The United States experience of about 300 (three hundred) years can be considered an unusu lly fast case in the sense that people who spoke different languages developed a culture and a language to express it in just 2-3 centuries. However, the rapid development of the United States cannot be totally dissociated from the over 1600 (one thousand six hundred) years development experience of the Europeans who came from Europe to the New World to build the new nation.

Table 1. Time required for transforming from agricultural to industrialized/ democratic societies.

Nation	Earliest origin	Period of rapid industrialization	Industrialization times (years)	Democratization time (years)
Britain	55 B.C.	1770–1850	1905	More than 1905
Japan	300 B.C.	1886-1905	2205	More than 2205
United States	1606	1850-1900	294	More than 294
China	1000B.C	1949–1990	2990	More than 3000

The importance of the observation about the long time the development process traditionally takes is to draw attention to the need to realise that the development process demands serious efforts. Building a nation is a serious challenge.

(ii) There is precedence in the development process

The experiences of different nations show that the development process follows a particular order – nations generally achieve industrialization before democratization (figure 1). This is important to

know to promote effective development planning. This also suggests that economically backward nations cannot make rapid political progress. At this level, we define democratization as the effort aimed at promotion mass participation in the economic and political spheres of a nation.

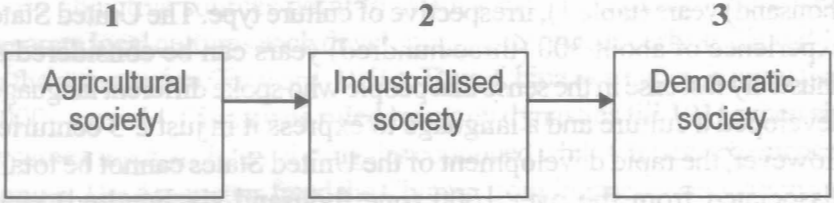

Fig. 1: Illustration of the precedence in the development process.

(iii) **All the industrialized nations of today were also agricultural nations in the long past. They have been transformed into industrialized nations.**

(iv) Modern Industrialisation is announced by many important scientific /technological developments.

The European modern industrialization first manifested in Britain was announced by eight textile-related major inventions (Amrine, et al., 1982).

Textile manufacture involves three major activities:

- § Spinning fibres into yarns (s)
- § Weaving of yarns into cloth (w)
- § Bleaching/dyeing of fabric (b/d)

The English Industrial Revolution was characterized by the following inventions and innovations:

- § Hargreaves spinning Jenny (1770)(s)
- § Arkwright Water Frame (1771) (s)
- § Crompton's mule (1799) (s/w)

§ Cartwright's power loom (1785/1811) (w)

§ Watt's Steam Engine (spinning/weaving) (1769)(w/s)

§ Berthollet's /Tennant's cholorine bleaching (1785/98)(b/d)

§ Maudlay's screw-cutting lathe (1797)

§ Eli Whitney's interchangeable manufacture (1798)

The American industrialisation was announced by the following innovations (Bartlett, et al.,1969):

1793: Eli Whitney invented the cotton gin, the machine for separating cotton seeds from the fibres

1798: Eli Whitney also developed the interchangeable manufacture practice

1807: Robert Futton invented the steam boat

1830: Peter Cooper invented the locomotive

1831: Cyrus H. McCormic developed the reaper.

1839: Goodyear developed the rubber vulcanization process.

1844: Samuel E.B. Morse invented the telegraph

1846: Elia Howe invented the sewing machine.

Richard Hoe invented the rotary printing press.

1851: William Kelly invented the Kelly process for converting pig iron into steel.

1852: Elisha Otis invented the passengers' elevator which made skyscrapers possible.

1859: Edwin Drake invented the oil drilling process.

The American experience was more robust than the British one, hence the scientific and technological development were more varied. At the end of the nineteen century, Americans looked back on the thirty-five

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The American experience was more robust than the British one, hence the scientific and technological development were more varied. At the end of the nineteen century, Americans looked back on the thirty-five

years after the Civil War (1861-1865) with amazement. The entire nation had been transformed in their lifetimes. All around them were huge new cities, large population, a bewildering array of new machinery, a vast railroad network and thousands of new factories, mills and mechanized farms. These are fundamental developments and changes. Any genuine development effort must be aimed at promoting similar developments. For, the industrialization process may be likened to development and ripening of fruits, or to speaking a language, or to growing a flowering plant, or to achieving puberty(Ogbimi, 2007).

(v) Nations come into existence accidentally

It seems most nations come into existence accidentally. The existence of the United has to do with the efforts of British business men who established colonies in the New World. The existence of Latin American nations has to do with the mercantile activities of Spain and Portugal. The Islands of England exist as a matter of geographical accident. When great minds meet accidentally, they build great nations.

(vi) Development experiences show that the development process is traditionally characterized by violence. The American War of Independence (1775-1783) and the American Civil War (1861-1865) are part of the American experience. The English Revolution of 1640-1688 and the French Revolution of 1789 were not palatable experiences for Europeans. The Chinese 1945-49 Civil War won by Mao Zedung was a terrible experience for the Chinese. Can the people of Africa learn from the experiences of other nations and avoid the blood-letting experiences of other nations? It is desirable that Africans should be more careful so as to avoid wars in the continent. Africans should work hard towards achieving intellectual revolutions instead of bloody-letting revolutions.

Fundamental questions raised by history

Our knowledge of history especially the development experiences of the present great nations raises many questions. The more fundamental ones are:

i. Why does achieving industrialization and democratization traditionally take about 2000 years?

ii. What does the development process involve?

iii. Can the process be hastened or accelerated?

iv. How long will it take the present agricultural African nations to become transformed into industrialized and democratized nations?

The rest of the lecture provides some answers to the above questions, though not in the order in which they appear. Question (ii) is the most important one. It is only when we know what achieving industrialization and democratization entails that we can explain whether the process may be accelerated or not, how long it will probably take African nations, and why the development process traditionally takes a very long time.

INDUSTRIALISATION

Today, there are two main types of nations in the world. They are: the industrialized (the haves) and the non-industrialised (the have-nots). The industrialized nations are located in the West and some parts of Asia, whereas the non-industrialised nations are in African, Latin America and some parts of Asia. Why is Africa not industrialised? Has Africa always been the poorest and hopeless continent? A historical note about African past is pertinent here.

Brace (1971), observed that culture is central to man's evolutionary success; culture includes not only the high points of art, music and literature, but also all those things that result from cumulative efforts of other people and previous generations. Culture also includes traditions regulating their use, vital information, feelings and expressions and language. Brace also postulated that some parts of culture are perishable or intangible and therefore to not contribute much to show how long a culture has existed.

According to Brace, non-perishable cultural elements have an antiquity of about two million years in Africa. The cultural tradition of which they are part of continues without break, expanding to occupy the

tropical and temperate parts of the Old World around 800,000 (eight hundred thousand) years ago, and ultimately developing into all the cultures in the world today. Brace and his team also postulated that Africa is the original birth place of all mankind.

The foregoing is an excerpt of the essay which Dr. C. Loring Brace, then curator of physical anthropology at the University of Michigan museum wrote about what had been learnt about the origin of man. It suggests how man originated in Africa, why all his forebears were black and why some through adaptation have what people now call white skins.

Egypt, Mesopotamia and Crete were the centres of world civilization at about 3000B.C. (Allcroft and Mason, 1958). These societies at that time enjoyed splendid achievements in architecture, painting, and sculpture. Archaeological evidence suggests that in these centres, large populations of people enjoyed a high standard of living, engaged in a flourishing industry and extensive trade. At about 1600 B.C., Crete, the **Aegean Civilization,** exercised a powerful influence on the Greeks (Allcroft and Mason, 1958). It was through trade and other activities that these societies maintained their vigour and rich cultures over many centuries.

Carthage and Rome fought the First Punic War at about 264 B.C. Rome did not have a navy at the time whereas Carthage had Quinquerems (large war ships which had 300 crew, five people to an oar). Rome became determined to build a navy by copying the Carthaginian Navy. By 146 B.C – a period of about 120 years, Rome surpassed and destroyed the Carthaginian empire, and Rome became the undisputed world power (Errington, 1972). Rome later expanded to include most of the areas now occupied by modern Europe.

The period 500-1470 witnessed the flourishing of independent states and empires in West Africa. Among these were the Ghana, Mali, Songhai, Kanem Bornu, Benin, and Oyo empires and the Hausa states which clustered along the southern frontiers of the Sahara (De-Graft Johnson, 1955, and Clarke, 1971).

Before 1300 A.D. the level of scientific and technological development in many respects was lower in the West than in the Great

Medieval Civilizations (GMCs). The GMCs were China, India, Africa and the Islamic world. In those civilizations, science had flourish during the Dark Ages of the West (Gottschalk, et, al., 1969). During the Medieval Age, the flow of knowledge was from the GMCs to the West (Cardwell, 1974). The West did not immediately make the great scientific strides that it later showed itself capable of making and therefore, there was a centuries – long plateau between absorption of oriental, Islamic and African Scientific Knowledge and an independent Western Science (Gottschalk, et, al. 1969).

When the Roman empire was smashed by Germanic wandering tribes at about 406 A.D., Islam was brought to the Iberian Peninsula by Arabs and Berbers (the Moors) in 711 A.D. (Webber and Hussey, 1941). Europeans called the Berber the Moors because they were black people. The Arabs introduced the Arabic language into Spain. An independent Arab emirate was established there which became a caliphate in 929 A.D. The capital, Cordova, became a centre of arts, learning and refinement. The Arabs developed the Iberian Peninsula to the extent that it was the most advanced part of Europe up to the end of the seventeenth century.

During the period African empires flourished and Arabs and Africans occupied southern Europe, European records show that Africans were very generous; the Africans willingly transferred his inventions and those of great civilizations like China and India to Europe (Cardwell, 1974).

The Iberian Peninsula broke into Spain and Portugal in 1479. Spain and Portugal were the two European nations strong enough to champion the so-called Discovery Voyages in which Africa and America were discovered and re-discovered by Europeans as from the fifteenth century. Africa had been known to Europe. The special advantage which the Iberians derived from their African/Arab association underlay their special performance in those voyages. The Iberians had been trained by Africans/Arabs in seafaring activities (ref. the Carthaginians and their quinquerems). The voyages marked the beginning of the period since Westerners began to exert strong influences on Africans. The voyages also marked the origin of Latin American nations and indeed the United .States of America.

Africans-Westerners encounter since the fifteen century has been through three principal phases (Ogbimi, 1993; and Ogbimi, 2008). The first phase was the period about 1441-1850; this is the period Westerners subjected many Africans to slavery. The second phase covered the period 1850-1950. This was the period Westerners partitioned Africa into units now called nations. The third phase has to do with the period 1950 - now. This is the period since Western nations began to indoctrinate and plan for African nations.

Planning for Industrialisation in Africa since colonial time

Nigerians have been sharing a common history since 1914, the year Nigeria was declared a nation by Britain, her colonial master. Thus, there were various colonial development plans for Nigeria before 1960. Hence, although Nigeria celebrated her 50th Anniversary on October 1, 2010, there has been planning for the geographical space called Nigeria for about 96 (ninety-six) years. This is also the situation in all other African nations; there has been planning for periods longer than their independence anniversaries. What has been the nature of planning for development in Africa?

Planning has two main parts. The first part is the thinking phase. The second part is the activity phase (Ogbimi and Adjebeng-Asem, 1994). Once the thinking phase is faulty, the activity phase fails - the plan does not achieve its objectives. This is probably the basis of the injunction, 'think before you act!' The scientists and engineers say, for every problem there is a solution in principle and a solution in practice.

Between the period 1960 and 1985, Nigeria adopted four 5-year National Development Plans. These are 1962-68 National Development Plan (NDP), 1970-74, 1975-80, and 1980-85 NDPs. Nigeria abandoned Nation Plans in 1986 and adopted the Structural Adjustment Programmes (SAPs) which the World Bank and the International Monetary Fund (IMF) introduced to many other African nations. Nigeria and other African nations became unhappy with SAPS in the mid-1990s and decided to adopt Visionary Plans. Nigeria assembled sages to conceptualise Vision 2010. This was not implemented before

Nigeria adopted NEEDs 1- the National Economic Empowerment and Development Strategy, in the period 2003 – 2007, and then adopted Vision 20 -2020 in year 2008. In all these plans, the development strategy has been International Technology Transfer (ITT), Import Substitution Strategy (ISS) and campaign for foreign investments especially Foreign Direct Investments (FDIs).

Okigbo (1989), analysed Nigeria's planning process 1900 – 1992 and concluded that the theory that has been guiding Nigeria's development planning since 1962, the year of the First National Development Plan (1962- 68), remains the Harrod (1939) – Domar (1946) Model – the HDM. The HDM is based on the belief or mere claim that capital investment is the primary source of growth in an economy. They HDM is expressed as

$$g = ós \quad \ldots\ldots (1)$$

where: g is annual growth in income,

ó is a constant known as output–capital ratio, and

s is the saving propensity of a society.

Hence, all that matters according to equation (1), is savings, s. This explains why accountants, lawyers and most social scientists merely sing the need to seek foreign investments and save. The HDM is the guiding theory for planning in all African nations. The New Partnership for Africa's Development (NEPAD), according to Aluko-Olokun (2002) is the collective vision of African leaders to resolve the crisis of governance and development in Africa in the 21st century. NEPAD, Aluko-Olokun added, is coming after the failure of 37 other initiatives of African leaders. NEPAD is also based on the belief that mere capital investment especially Direct Foreign Investments (DFIs) promote sustainable economic growth.

It is for this belief that all African nations think that nations develop by merely erecting all forms of infrastructure: road and telecommunications networks, industrial plants, urban centres, Export Processing Zones (EPZs) dams, etc., and by begging for foreign investments and aids. The Nigerian Investment Commission (NIPC) and the Nigerian Stock Exchange (NSE)

are all instruments for mobilizing capital. In societies where capital investment is seen as the most important factor of production, planning is synonymous with efforts aimed at making capital available (Galbraith, 1967). Does mere capital investment promote sustainable economic growth and industrialisation (SEGI)?

What does Industrialisation Entail?

Abramovitz (1956) and Solow (1957) showed that about 90 per cent of the growth of output per head in the American economy during the late nineteenth century through the first half of the twentieth century could not be accounted for by increase in capital per head. The findings of Abramovitz and Solow disappointed economists because they had been brought up to believe that capital accumulation and investment play a critical role in achieving SEGI (Thirlwall, 1972). Abramovitz was however honest and advised economists to look somewhere else from capital in search of the source of SEGI. Gerschenkron (1966), examined the development experience of the West and concluded that capital accumulation and capital investments were not pre-requisites to western industrialization. What then is the basis of the emphasis on capital investment in African development planning?

Ogbimi (2007), observed that the comparative economic statuses of the non-industrialised and the industrialized nations may be depicted on a competence-scale. Using the y-axis as the competence scale, the position of the non-industrialised African economies with low competence (capabilities) may be marked as point A, while the position of the industrialised nations may be marked as point B above point A. Sustainable economic growth and industrialisation (SEGI) can be defined in relation to the model-competence scale as a progression from level A to level B or movement from a lower position to a higher position along the AB scale. That is, growth should increase the ability of an individual or nation to do more for itself and be more self-reliant.

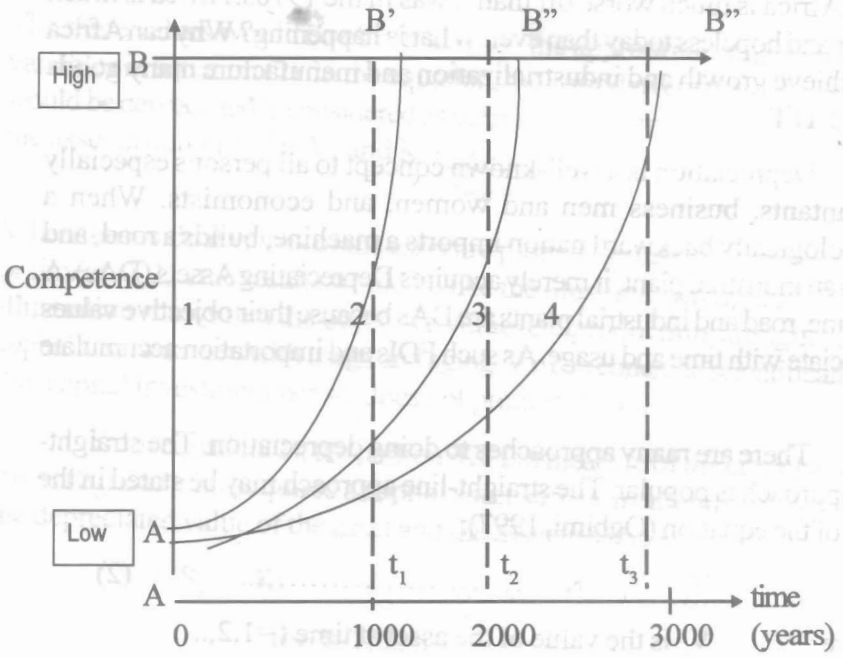


Fig. 2: Representation of the human development experience from low competence level A to high competence level B.

Figure 2 is a representation of the development experiences of the industrialized nations of today. History does not show that any nation achieved instantaneous or timeless development (case 1). Rather, the advanced nations of today built up competence over a long time usually 2000 years before achieving industrialisation. So, cases 2, 3 and 4 are real. Case 4 is the slowest one followed by case 3, case 2 is the fastest.

African nations import very many things and erect many structures – road and telecommunication networks, industrial and business machines including computers, industrial plants, urban centres, real estate, airports, seaports, aeroplanes, ships, railways, stadia, etc., in attempt to promote growth or modernise Africa. African leaders have also been importing tractors and other farm machinery and equipment so as to improve agricultural productivity. These efforts have continued for decades to no

avail. Africa is much worse off than it was in the 1970s. Africa is much poorer and hopeless today than ever. What is happening? Why can Africa not achieve growth and industrialization and manufacture many goods through ITT?

Depreciation is a well-known concept to all persons especially accountants, business men and women, and economists. When a technologically backward nation imports a machine, builds a road, and erects an industrial plant, it merely acquires Depreciating Assets (DAs). A machine, road and industrial plants are DAs because their objective values depreciate with time and usage. As such FDIs and importation accumulate DAs.

There are many approaches to doing depreciation. The straight-line approach is popular. The straight-line approach may be stated in the form of the equation (Ogbimi, 1997):

$$V_t = V_0 - Kt \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (2)$$

Where : V_t is the value of the asset at time t =1,2,..

V_0 is the initial value of the asset

K is the annul depreciation constant.

For one who acquires a machine for production, V_t is better described as the production strength at time t=1,2... and K as the reduction in production strength every year till the machine is abandoned. **Equation (1) is an expression of a real situation or natural occurrence; it is a scientific statement of a natural process.**

In the traditional way accountants do depreciation, if a N500,000.00 asset is depreciated over five years, using the straight line depreciation approach, then K equals N100,000.00. At the end of the first year of usage, the residual amount or worth of the asset, becomes N500,000 – N100,000.00 or N400,000.00. At the end of the second year the residual value is N400,000 – N100,000 or N300,000.000. The residual value of the asset at the end of the fifth year in the account books will be zero.

The same values would be obtained when the appropriate values of the variables in equation (2). In the equation, the period over which the asset would be depreciated is considered as the maximum time, $t_{max.}$ The amount the asset is purchased is V_0 and $K = \frac{Vo}{t_{max.}}$

When the residual values of the asset are plotted against service periods or time, t=1,2,.., the results would be like the illustration in figure 3. The illustration shows that the objective value and production strength of a capital asset decrease with usage and aging. We can conclude scientifically, that capital investment per se, does not promote SEGI.

From equation(2), the portion /Kt/ is a measure of the cumulative stress (S_c) one who acquires a capital asset suffers in attempt to restore the depreciated value of the asset and the asset to service. That is:

$$S_c = Kt \quad \text{for } t=1, 2, n. \qquad (3)$$

S_c increases with time; correspondingly, the reliability of the system decreases with time. This shows that no amount of capital investment per se, can establish a reliable infrastructural network, it is the development of a high level of manufacturing competence and industrialisation that establishes a reliable infrastructural system.

A graphical analysis of equation (2) produced the multiple illustrations in figure 4. The mathematical illustration, portion (a), shows that a backward economy which emphasizes capital investment may be likened to a blood-cancer patient. The patient unlike the healthy person does not produce enough red blood cells (life-sustaining requirement) to sustain his life.

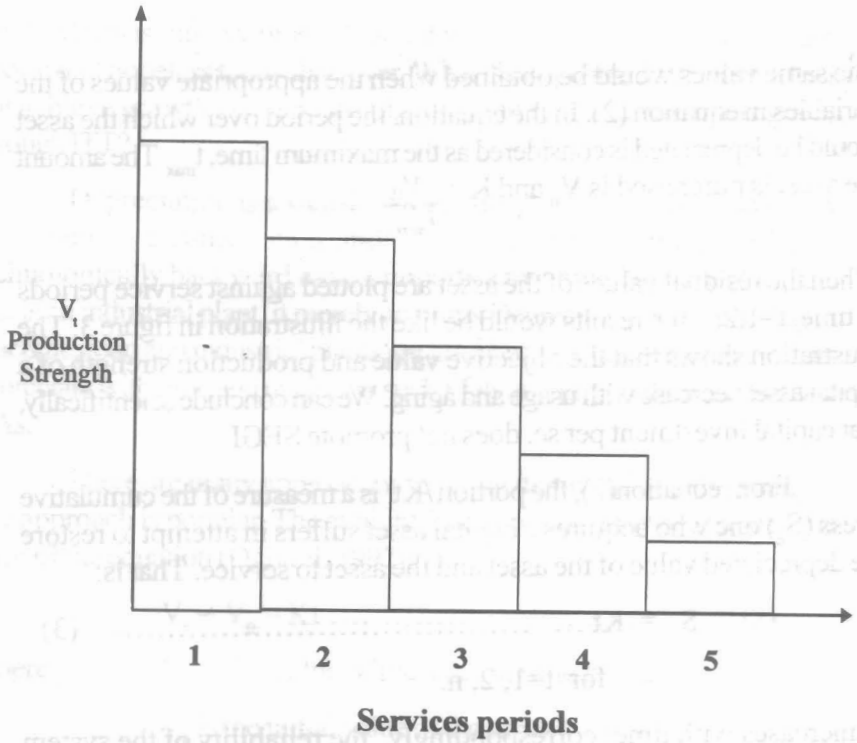


Fig. 3: The change in the value of a capital asset due to usage and aging

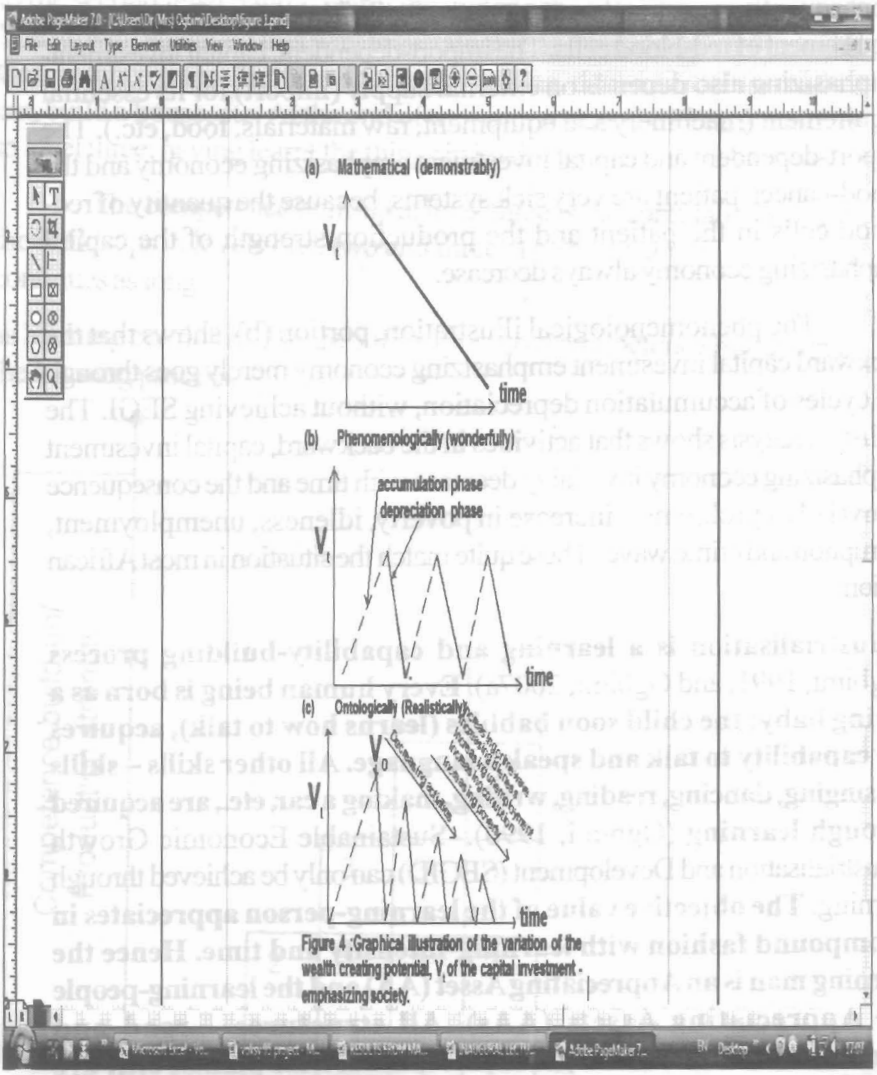


Figure 4 :Graphical illustration of the variation of the wealth creating potential, V_t of the capital investment - emphasizing society.

Figure 4: Graphical illustration of the variation of the wealth creating potential V_t of the capital investment – emphasizing society.

Consequently, he depends on external supply (blood transfusion) for his requirement of red-blood cells. The import-dependent, capital investment-emphasizing also depends on external supply (import) for its essential requirement (machinery and equipment, raw materials, food, etc.). The import-dependent and capital investment emphasizing economy and the blood-cancer-patient are very sick systems, because the quantity of red-blood cells in the patient and the production strength of the capital emphasizing economy always decrease.

The phenomenological illustration, portion (b), shows that the backward capital investment emphasizing economy merely goes through the cycles of accumulation depreciation, without achieving SEGI. The realistic analysis shows that activities in the backward, capital investment emphasizing economy invariably decrease with time and the consequence is myriad of problems – increase in poverty, idleness, unemployment, corruption and crime wave. These quite match the situation in most African nations.

Industrialisation is a learning and capability-building process (Ogbimi, 1991, and Ogbimi, 2007a). **Every human being is born as a crying baby; the child soon babbles (learns how to talk), acquires the capability to talk and speak a language. All other skills – skills for singing, dancing, reading, writing, making a car, etc., are acquired through learning** (Ogbimi, 1990). Sustainable Economic Growth Industrialisation and Development (SEGID) can only be achieved through learning. **The objective value of the learning-person appreciates in a compound fashion with learning-intensity and time. Hence the learning man is an Appreciating Asset (AA) and the learning-people are Appreciating Assets (AAs). All structures – road and communication networks, machines, industrial plants, etc., are depreciating Assets (DAs), because their objective values decrease with usage and time.**

Thus, when a person commences an educational programme or an apprentice scheme, he begins learning from the lowest level. Usually, at the end of the first year of learning, the learning-person (LP) is promoted

to the second level having learnt the things scheduled for the first level. The growth achieved this way is sustainable and builds-up competence. Competence is the ability to do things – to sing, dance, repair car, build a car, build a house, etc. At the end of the second year, the LP again moves to level three, having learnt the things in level two.

The competence built-up at level three is the cumulative value of the build-ups in levels one, two and three. The build-up of competence continues as long

as learning continues. Figure 5 illustrates how competence builds-up in the learning process.

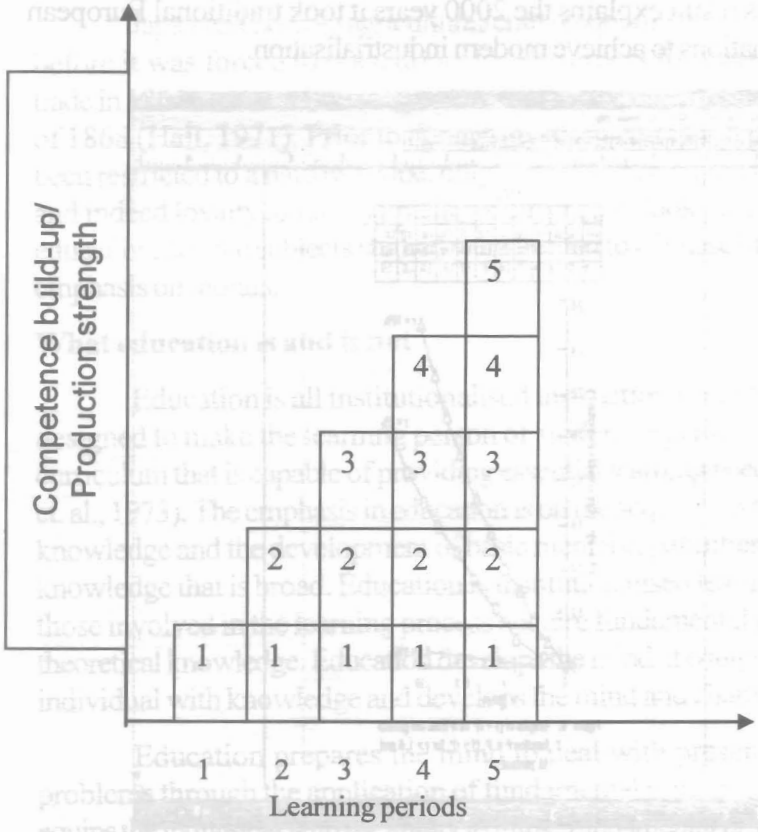


Figure 5: A schematic of how competence builds-up in the learning process

The intrinsic (objective) value of the LP, M_n, as a function of the learning intensity, r, and time, n, may be expressed as (Ogbimi, 1992):

$$M_n = M_0 \ (1 + r)^n \ \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ (4)$$

Where: M_0 is the initial objective value before learning commences, and n=1,2,. A graphical analysis of equation(4) shows the composite curves in figure 6. The figure shows that learning rate or intensity (r) determines the rate of progress in the learning process. Low learning rate leads to slow progress for the individual and nation and high learning rate leads to rapid progress.

This result explains the 2000 years it took traditional European and Asian nations to achieve modern industrialisation.

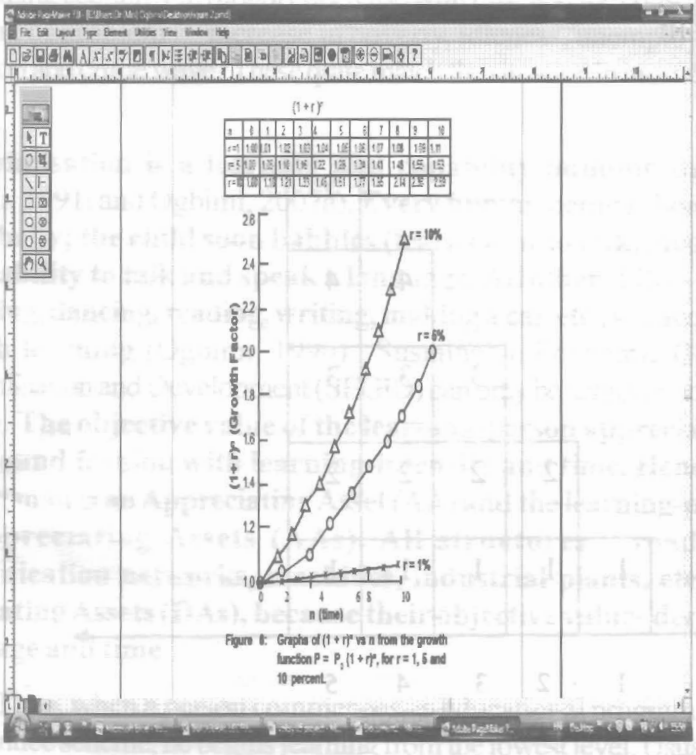


Figure 6: Graphs of (1+r)^n vs n from the growth function P = P_0 (1+r)^n, for r = 1, 5 and 10 percent.

Figure 6: Graphs of $(1+r)^n$ vs n from the growth function of $M_n = M_0 (1+r)^n$, for r = 1, 5 and 10 percent

Why industrialisation traditionally takes 2000 years

Traditional **European and Asian nations toiled for 2000 years and longer before achieving industrialisation because of very low learning rates. When Britain achieved industrialisation, it did not have a public primary educational system** (Dent, 1975). The first decisive advance towards a statutory system of public education was delayed till 1870. In the absence of public elementary, secondary and tertiary educational systems, learning in Britain was reduced to learn if you like (**laissez-faire** learning). This low-intensity learning explains the very long time European modern industrialisation took (Ogbimi, 2006).

Japan had been an agricultural/craft- economy for over 2000 years before it was forced to open doors to Westerners for interactions and trade in 1854 and then the change in government and the Meiji Restoration of 1868 (Hall, 1971). Prior to the Restoration, education in Japan had been restricted to a narrow scope, only a certain class enjoyed its benefits and indeed loyalty to family and hereditary rights took precedence over education, and the subjects studied were limited to Chinese literature with emphasis on morals.

What education is and is not

Education is all institutionalised instructions or course of study designed to make the learning person or student experience the type of curriculum that is capable of providing essential learning needs (Coombs, et. al., 1973). The emphasis in education is on the acquisition of theoretical knowledge and the development of basic mental capabilities and general knowledge that is broad. Education is institutionalised learning in which those involved in the learning process acquire fundamental principles or theoretical knowledge. Education develops the mind, it equips the learning individual with knowledge and develops the mind and character.

Education prepares the mind to deal with present and future problems through the application of fundamental principles. Education equips the individual with the ability to think; fundamental principles equip the individual with the capacity to think and reason. The educated person

has a developed mind (Ogbimi, 2002). There is no limit to the problems that the developed mind can solve. A nation stagnates when the minds of the citizens are not sufficiently developed to solve the problems confronting it. The essence of education is in developing trained minds (Nduka, 1997).

Nigeria and other African nations have so far adopted two types of educational systems. The first was the 6-5-2-3 in which the six years old child begins primary school and spends 6 years in it, then 5 years in secondary school, 2 years in higher secondary education and 3 years in the university. The second was the 6-3-3-4 system in which the 6 years old child enters primary school and spends 6 years in it, 3 years each in junior secondary and senior secondary schools and spends 4 years in the University. Both the old and new educational systems were fundamentally designed to equip the youth with fundamental principles and develop the mind and character. The acquisition of practical skills or laboratory activities in the two systems is meant to illustrate fundamental principles. The two systems were meant to prepare the youth for a working career. Education is distinct from training.

Training

Many authors agree that for planning purpose and for effectiveness, training should be clearly defined and be clearly separated from education. Coombs (1973) defines training as a scheme designed to generate expertise or skills needed to perform a particular job or series of jobs. Training is generally through practical exposure, either informally by practical exposure to job, or in formal institutions established for the purpose of providing exposure to required skills. The emphasis in training is on practical work and demonstration. Whereas theoretical work is not ruled out in training, its scope and content are limited and intended to supplement practical work. Whereas education prepares the individual for eventual skills acquisition, the attainment of skill or expertise is provided by training (Ehiametalor, 1988).

Kanawaty (1985), observed that training prepares people for work and life. Skills are largely developed in a working situation; competence develops through improvements of awareness, knowledge and skills. Any

gap between a person's and the skills needed for a job should be bridged by training (Bright and Van Lamsweerde, 1993).

The distinction between education and training is very important to successful manpower planning, Ehiametalor (1988), observed. This is because the failure of manpower planning endeavours in the developing world has a lot to do with improper distinction between these concepts.

Manpower development refers to the various approaches of preparing the people who have necessary knowledge, skills, experience and competences for the proper functioning of an economic system. This poses the challenge of developing the necessary quantity and quality of people for social, economic and political development of a society. Manpower development goes beyond investment by society on formal education (Okunrotifa, 1978). It includes investments in training by government and employers of labour. It also includes investments of time, effort, determination and money by individuals and groups of people on developing competences, and capabilities to do things, including production.

Anyone who acquires either formal education or training for practical skills, alone, is a mediocre person (Ogbimi, 1991). A nation that produces people with either formal education or training, alone, remains a mediocre-nation for a long time. The development of the people with the Relevant Product Skills (RPSs) for a society demands developing the people with both theoretical knowledge and practical skills developed to high levels (Ogbimi, 1992a). For a nation to develop the necessary manpower for the economy to function effectively and efficiently, the nation must develop many millions of people equipped with both theoretical knowledge and practical skills developed to advanced levels. Facing challenges is very important in achieving this task.

Why education promotes rapid industrialisation

Education is high-intensity learning. The converse is laissez-fair learning. Compare the 50 years old man long ago, who never had the opportunity for formal education with the 5-year old little boy today, who already knows how to read. This is a matter of learning rate. Also, compare

the 26 years old girl who had opportunity for formal education and has graduated as a medical doctor or engineer or a scientist with his counterpart who had no opportunity for formal education and does hoe and cutlass-farming. This is also a matter of learning rate. Education promotes high-intensity learning. High-intensity learning correspondingly promotes rapid growth and industrialisation.

ACHIEVING RAPID DEMOCRATISATION

My analysis of many development experiences and the theory and practice of democracy and federalism suggests that certain things are fundamental to achieving rapid democratization in a nation. These fundamentals are presented here:

Fundamentals of Democracy

Today, democracy has become everything – election, human rights, free press, employment, potable water, electric power, free trade for developing nations-cum-subsidized trade for the technologically developed world, etc. Democracy is still poorly understood in terms of what the fundamentals are and how it can be achieved. The fundamentals must be understood, if the desirable socio-econo-political status called democracy is to be achieved rapidly in Africa.

Democracy is achieved through learning

American, European and Asian nations did not achieve democracy just because they had political parties and held elections.

Mankind has been learning and man has come to know that mass participation in all aspects of the economy and politics of a nation (democracy) is better than feudalism, militarism, monarchy, and indeed constitutional monarchy. Learning leads to relatively permanent changes and transformation (Klausmeier, 1985; and Ogbimi, 1999). Learning progresses from a novice (inferior) position to an expert (superior) position (Stahl, 1990).

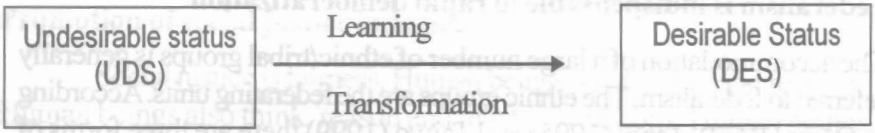
Learning transforms an individual or a nation from an undesirable status(UDS) into a desirable status(DES)(Ogbimi, 1995). Democracy may

be considered as only one of, or an embracing term for the many desirables in the development or the learning-transformation process which may be represented as in figure 7. The schematic shows how a society in an undesirable status (UDS) is transformed through learning into a desirable status (DES). High-intensity learning is the critical factor that promotes rapid democratization (Ogbimi, 2000).

Economic well-being is crucial

Economic well-being – awareness/knowledgeable people, advanced skills, advanced industry, advanced agriculture, high employment and high productivity are indispensable to achieving democracy. History shows that all Western nations achieved industrialisation long before talking of democracy.

The British industrial revolution occurred 1770 – 1850 (Gregg, 1971). It was the horrible experience of the westerner that that Karl Marx (1867) wrote about in **Das Kapital.** One hundred years after the English industrialisation, child labour, excessively long working hours, slave wage, workers without rights, poor sanitary conditions were the evils that characterized the English industrialisation. The situation in the United States was not less horrible. Industrialisation there and deregulation were tools of exploitation.



Ethnic/tribal groups	National groups
Ethnic/tribal institutions	National institutions
Ignorance/ignorant People	Awareness/knowledgeable people
Artisan skills	Advance skills
Artisan industry	Advance skills
Artisan agriculture	Advanced agriculture
Mass unemployment	Low unemployment
Poverty	Affluence

Feudalism/militarism/Monarch	Democracy/federalism
Greed	Sharing
Domination	Cooperation
Injustice	Justice/fairness
Primitive culture	advanced culture
Other undesirables	other desirables

Figure 7: The transformations associated with growth and development, including federalism and democracy.

The citizens rose against the evils of greed. The results of the fight for rights and freedom and control of destiny, produced the Labour party in the United Kingdom and the Democratic party in the United States. In the Athenian experience, as part of the democratization process, a huge programme of public works was initiated; citizens were employed and paid salaries. Citizens were compensated for exercising their civic rights. This improved the economic status of the lower class and ensured that no citizen was prevented from exercising his political rights by poverty (Fotopoulos,1997). Weak economic base promotes weak democracy. This explains the difference between the United States and Indian democracies.

Federalism is indispensable to rapid democratization

The accommodation of a large number of ethnic/tribal groups is generally referred to federalism. The ethnic groups are the federating units. According to Oates (1972), Tanzi (1995) and Taiwo (1999) there are three forms of federalism. These are fiscal federalism, political federalism and administrative federalism. Political federalism has to do with the division of powers among the tiers of government. Fiscal federalism is about the allocation of resources among the tiers of government. Administrative federalism involves delegation of functions to lower level government. Ogbimi (2008), observed that there may be as many as six levels of government or learning levels, but recommends five. These are: (1) Mayoral, (2) Local government, (3) State, (4) Regional/zonal and (5) Federal. This setting will promote maximum high-intensity learning. Just

as specialisation promotes high productivity in the economic sphere, so the number of tiers determine progress in democratization. Unitary government (one learning level), promotes least learning rate and least progress.

Institutionalisation of society indispensable to democratization

(Ogbimi, 2000) defines institutionalised society as one that has institutionalised its activities (learning, production and practices), language, laws, music, dressing, relationships (inter-personal, intergovernmental), and developed knowledge-based institutions (educational, scientific/ technological, production, medical, family, language, political (party), congressional, executive, civil service, etc.). An institutionalised society is one guided by its experience and aspirations. DeFleur, et al. (1977), say that as the members of a group interact over a period of time, their interpersonal exchanges follow increasingly predictable patterns. Members come to know more clearly what is expected of them and what they can expect of others. That is, institutionalisation is the process of developing orderly, stable and increasingly predictable forms of recurrent interactions.

It is the institutions of the institutionalised society that regulate the bahaviour of the people. In the absence of these institutions, the people are in a limbo and many strange behaviours are exhibited.

Promotion of social justice indispensable

Social justice is fairness. Human beings have names and feelings. Human beings also think, reason and react to situations. Human beings remember what happened yesterday and try to predict what may happen tomorrow. Because human beings have these and other unique features, they cannot be treated like domestic animals, wood or cement blocks.

Fairness promotes peace and progress, whereas, injustice breeds crisis and stagnation. Africa must promote justice so that they can achieve rapid democratization.

The Nigerian case is a bad example. It demonstrates how lack of fairness and manipulation ruin a nation. Nigeria's national life has been a

matter of regret for most Nigerians. The manipulation of the derivation share in the National revenue sharing formula apparently destroyed the balance that is necessary in working federal systems. It has been the basis of coups, electoral malpractice, assassinations and other evils in Nigeria. The history of the derivation formula since 1953 is as follows:

Year	Constitution/Government	Derivation share (per cent)
1953	Chicks Commission	100
1960	Independence Constitution	50
1970	Gowon/Awolowo	45
1975	Murtala/Obasanjo	20
1982	Shagari/Ekwueme	2
1984	Buhari/Idiagbon	1.5
1992	Babangida/Aikhomu	3.0
1999	1999 Constitution	13
1999	Obasanjo/Atiku	??
2007	Yar'Adua/Jonathan	??
2010	Jonathan/Sambo	??

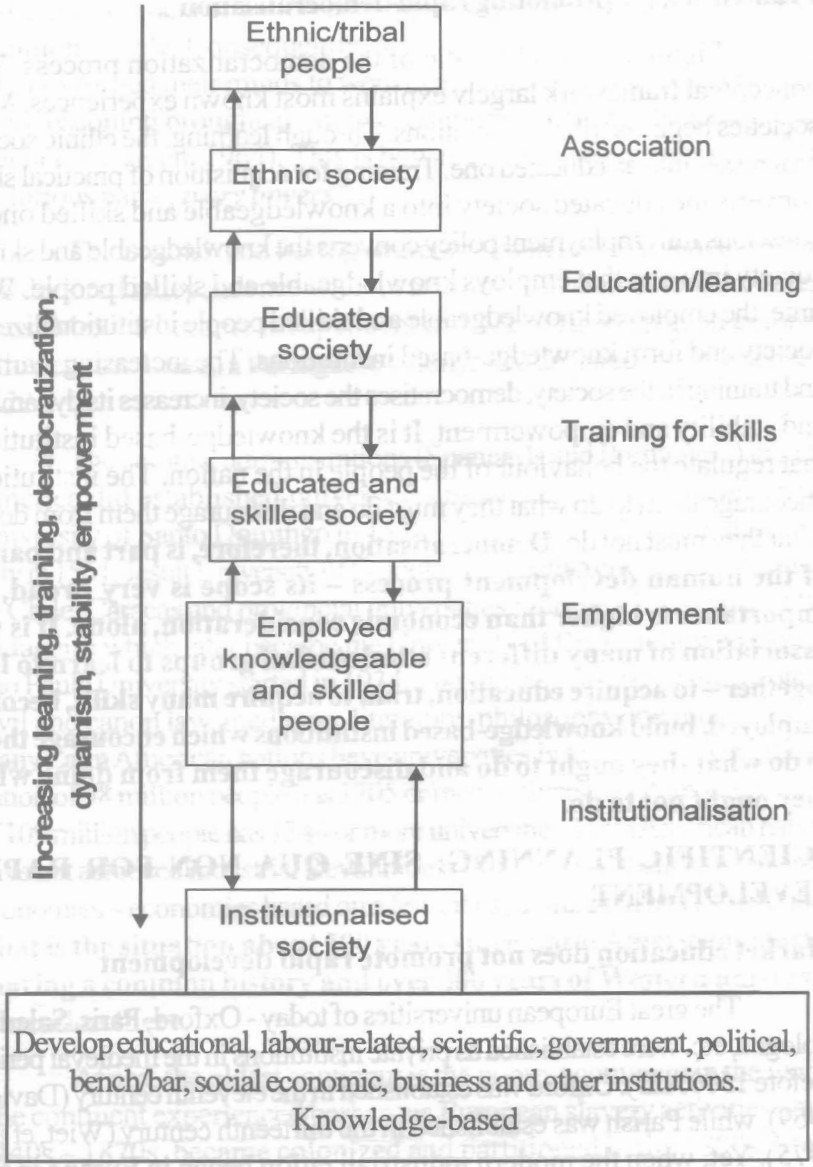


Figure 8: A schematic of the democratisation process.

Framework for promoting rapid democratisation

Figure 8, is a schematic of the democratization process. This conceptual framework largely explains most known experiences. Most societies begin as tribal associations. Through learning, the ethnic society progresses into an educated one. Training for acquisition of practical skills converts the educated society into a knowledgeable and skilled one. A conscious full employment policy converts the knowledgeable and skilled society into one that employs knowledgeable and skilled people. With time, the employed knowledgeable and skilled people institutionalize the society and form knowledge-based institutions. The increasing learning and training in the society, democratises the society, increases its dynamism and stability and empowerment. It is the knowledge-based institutions that regulate the behaviour of the people in the nation. The institutions encourage them to do what they must do and discourage them from doing what they must not do. **Democratisation, therefore, is part and parcel of the human development process – its scope is very broad, its importance is higher than economic consideration, alone. It is the association of many different ethnic/tribal groups to learn to live together – to acquire education, train to acquire many skills, become employed, build knowledge-based institutions which encourage them to do what they ought to do and discourage them from doing what they ought not to do.**

SCIENTIFIC PLANNING: SINE QUA NON FOR RAPID DEVELOPMENT

Market education does not promote rapid development

The great European universities of today - Oxford, Paris, Salerno, Bologna, etc. were established as private institutions in the medieval period (before 1500 A.D). Oxford was established in the eleventh century (Davies, 1969), while Parish was established in the thirteenth century (Wiet, et al., 1975). Yet, when the modern industrialization began in Europe in the eighteen century, universities were not known to have contributed significantly to the great feat. All through the medieval period, it was all struggles for power and nothing was done consciously towards bringing

about development of society and improving the standard of living of the common people. Consequently, in medieval Europe, the issues which scholars turned their minds to were often ridiculously trivial. The flight from reasoning brought about interest in superstition, black magic and witchcraft (Green, 1964). This is how medieval universities earned the inglorious name, ***ivory towers.***

The Spanish and Portuguese colonies in Latin America revolted and declared independence without any war with their colonial masters. Thus, Mexico became independent in 1822. Other Spanish colonies followed suit. Brazil, a Portuguese colony, also declared independence in 1822.

The colonial administrations (Spaniards and Portuguese) in Latin America did established universities modeled after European ones – University of Santo Domingo in 1538; Universities of Lima and Mexico City in 1551; Jesuit University of Cordola in Argentina city in 1613; Santiago de Chile, Caracas and provincial universities followed. University of Rio de Janeiro which later became the University of Brazil followed closely. Sao Paula University started in 1934. The subjects of study were theology, civil and canon law, medicine, literature, philosophy and music. Today, many Latin American nations have universities in thousands. Argentina, a nation of 38 million people has 1705 or more universities. Mexico, a nation of 109 million people has 1344 or more universities. Latin American nations have not achieved Industrial Revolutions (IRs). Most of them have enclave-economies – economies based on a few cities, dominated by ITT activities. **That is the situation about 500 years since Latin Americans started sharing a common history and over 400 years of Western university education there.**

Africa, the oldest continent is the poorest continent in the world. The continent experienced barbarous European slavery activities about 1440s – 1870s, became colonized and partitioned in the 1880s. Many African nations became independent as from the 1950s and 1960s. The West has continued to plan for African nations through the instrumentality of the so-called world bodies – the United Nations and its special agencies like the World Bank, IMF, UNDP, UNESCO, WHO, etc.

Nigerians began to share a common history in 1914; Nigeria gained political independence in 1960. University education in Nigeria began in 1948 with the establishment of the University College Ibadan, a college of the University of London. **How well has the university system performed in Nigeria?**

Banjo (2004), evaluated the performance of the Nigerian university system in the period 1948 – 20004 and passed a grim verdict. He said that it is widely agreed that so far, the universities have not contributed phenomenally to the country's development process. Banjo was unhappy that 56 years after the University of Ibadan had been established, the nation's near one hundred federal, state, missionary and individual universities, have not produced the manpower need for the development of the country.

Banjo thinks that the failure of universities in Nigeria to produce the needed manpower may be due to the fact that either that the universities are too few or that the curricula in the universities, are not sufficiently aligned with the development needs of the nation or it could be a combination of both.

Reflecting on the demand for privatisation of university education, Banjo opined that while government and missionaries traditionally promote education for broad development objectives, individuals set up educational institutions for the purpose of profit. In the same vein, individuals would only set up universities in Nigeria for the narrow objective of making profit.

Emeagwali(2004), also reflecting on the African situation, said, that Africans won the battle for independence on the continent, but lost the war on decolonizing their minds and have remained mired in uncertainty about their place in the world. Emeagwali is the Nigerian-American who invented the world's fastest computer.

Universities in Europe, America, Latin America and Africa based on Western economic principles – market economic principles, have traditionally been very slow in contributing to national and regional development. We can conclude that universities established and managed

based on market economic principles only respond to national demands very slowly. Africa must reconsider the management of her universities based on scientific principles, if they are to respond speedily to the development needs of the continent.

Why Scientific Planning is needed for African Universities

(i) Learning is the primary source of Sustainable Economic, Industrialization and development (SEGID)

The learning-people are appreciating assets (AAs) whereas all capital assets are depreciating assets (DAs). The learning people are therefore the priority or most strategic resource for promoting SEGID. High learning rates as in educational institutions must be planned for to promote rapid progress. Laissez-faire or market-dictated learning only promotes very slow national development, because it produces a distorted manpower mix (Ogbimi, 1998). Individuals acquire education to prepare themselves for a happy career. A wise nation must plan to educate her citizens so as to achieve rapid industrialisation and democratisation. Private enterprise organizations are principally established to make profit; they are never established to promote education.

The economic and political progress achieved by different people is the history of their learning. It is through learning that a less developed society gains from its contact with a more technologically advanced nation and not by mere importation of hardware. Mere importation of hardware does not promote technological progress.

Europe began the modern era with almost total dependence on the Chinese, Indian and Islamic cultures – the Great Medieval Civilizations (GMCs) (Cardwell, 1974). Indeed, England was accused by continental Europe of being unoriginal and copying its inventions just before the English achieved the first modern industrial revolution. The learning society is the progressive one. Americans later learnt from Europeans, and the Japanese and Chinese learnt from America and Europe. It is probably the turn of Africa to learn from Europe America and Asia. The organised learning under reference here cannot be done by profit-seeking enterprises. It needs

a planned educational system. Again, mere importation of hardware does not promote technological progress. The Americans tried mass importation as a strategy for technological development but quickly realised that it is a futile effort (Moore 1801).

(ii) Education must be complemented by training to create wealth and prevent the national loss due to mass unemployment

The wealth creation process is a dynamic and non-equilibrium one in which increased value and utility are created. **It has been observed (Ogbimi, 1992) that three non-exclusive economic groups characterize a wealth creating- economy. These are:**

(1) Government and the Investing Public (GIP)

(2) Learning and Educational Institutions (LEI)

(3) Production and Service Units (PSU)

The desirable linkage and flow of resources among the three economic groups constitute the Wealth Creating Cycle (WCC) (Ogbimi, 1997).

Figure 9, illustrates the WCC. The GIP makes input of people desirous of learning, money, materials and time - DAs, through linkage L -1 into the LEI group. Because the resources that flow through L -1 are DAs, the depreciation equation is written on linkage L -1. The LEI group uses all the inputs to produce the learning people – AAs. The transformation of DAs into AAs by the LEI group is the critical step in the wealth creating process. In the absence of this critical conversion, wealth cannot be created.

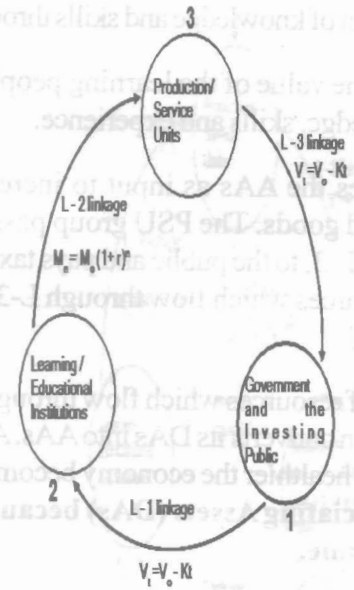


Figure 9:The relationships among the main economic groups in an economy, the Wealth Creating Cycle (WCC).

Figure 9: The relationship among the main economic groups in a well- managed economy, the Wealth Creating Cycle (WCC).

The LEI group passes the AAs through L-2 as input into the third group, PSU. The resources which pass through L-2 are AAs, hence the appreciating asset equation is written on it. The AAs, the learning people create wealth (increase in value and utility) through the following three ways:

1. Repeat use of knowledge and skills
2. Multiplication of knowledge and skills through teaching.
3. Increase in the value of the learning people as they acquire more knowledge, skills and experience.

The PSU, group 3, uses the AAs as input to increase productivity, production, services and goods. The PSU group passes the goods and services through linkage L-3, to the public and pays taxes to government. Again, because the resources which flow through L-3 are DAs, the DA equation is written by it.

The larger the quantity of resources which flow through L-1 into the LEI group, the more the nation converts its DAs into AAs. As long as the PSU uses increasing AAs, the healthier the economy becomes. **Idle people in this context are Depreciating Assets (DAs) because their intrinsic values decrease with time.**

There exists the Poverty Promoting Cycle (PPC) – figure 10. Universities and other educational systems produce graduates equipped with fundamental principles. They are expected to be trained to acquire **complementary practical skills** in the economy outside campuses,

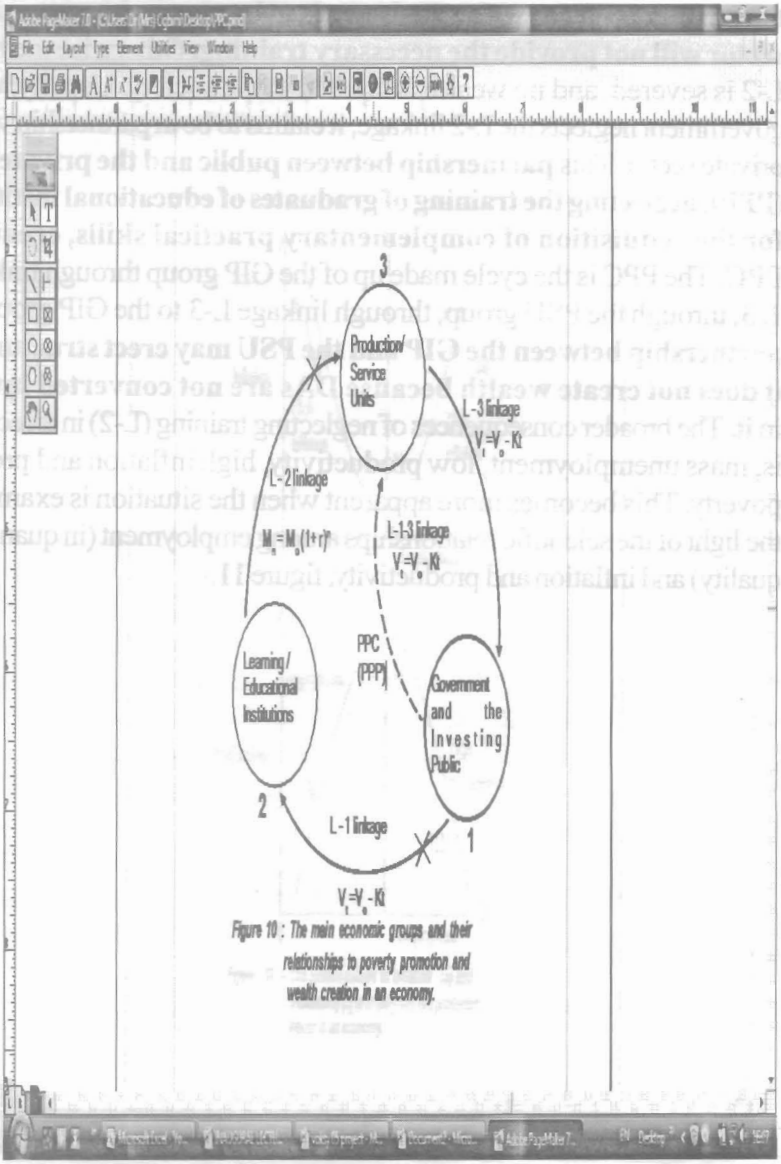


Figure 10 : The main economic groups and their relationships to poverty promotion and wealth creation in an economy.

Figure 10: The main economic groups and their relationships to wealth creation and poverty promotion in the economy

the PSU group in the WCC. **This needs to be planned for; the private sector will not provide the necessary training.** Otherwise the linkage L-2 is severed, and no wealth is created in the society. Usually, when a government neglects the L-2 linkage, it claims to be in partnership with the private sector. This **partnership between public and the private sector (PPP), neglecting the training of graduates of educational institutions for the acquisition of complementary practical skills, creates the PPC.** The PPC is the cycle made up of the GIP group through linkage L-1, 3, through the PSU group, through linkage L-3 to the GIP group. **The partnership between the GIP and the PSU may erect structures but it does not create wealth because DAs are not converted into AAs in it.** The broader consequences of neglecting training (L-2) in an economy is, mass unemployment, low productivity, high inflation and prevalent poverty. This becomes more apparent when the situation is examined in the light of the scientific relationships among employment (in quantity and quality) and inflation and productivity, figure 11.

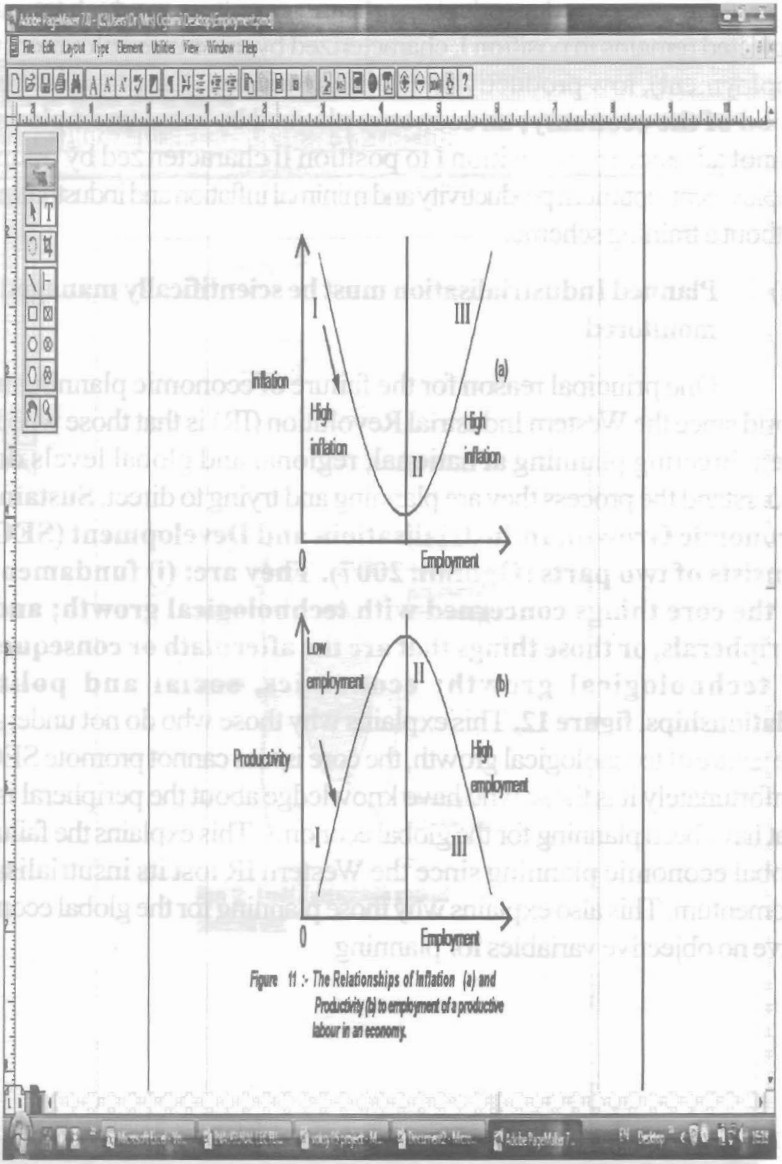


Figure 11 :- The Relationships of Inflation (a) and Productivity (b) to employment of a productive labour in an economy.

Figure 11: The relationship between Inflation (a) and Productivity (b) and Employment in an economy

An economy dependent on artisan-agriculture in which training is neglected remains in position I, characterized by mass unemployment (low employment), low productivity and high inflation. **Employment is the blood of the economy;** an economy plagued by mass unemployment cannot advance from position I to position II characterized by optimum employment, optimum productivity and minimal inflation and industrialization without a training scheme.

(iii) Planned Industrialisation must be scientifically managed and monitored

One principal reason for the failure of economic planning in the world since the Western Industrial Revolution (IR) is that those who have been directing planning at national, regional and global levels do not understand the process they are planning and trying to direct. **Sustainable Economic Growth, Industrialisatioin and Development (SEGID) consists of two parts (Ogbimi, 2007). They are: (i) fundamentals, or the core things concerned with technological growth; and (ii) peripherals, or those things that are the aftermath or consequences of technological growth: economics, social and political relationships, figure 12.** This explains why those who do not understand the nature of technological growth, the core issues cannot promote SEGID. Unfortunately it is those who have knowledge about the peripheral issues that have been planning for the global economy. This explains the failure of global economic planning since the Western IR lost its insutrialisation momentum. This also explains why those planning for the global economy have no objective variables for planning

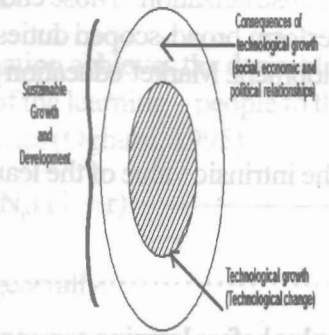


Figure 12: A model of what sustainable growth and development entail.

for programmed industrialization and monitoring the progress. Besides, there is need to match skills-endowment/talents and education/duties, to promote high productivity in a nation. There are three types of skills endowment. They are: technical, interpersonal or human and conceptual skills(Davis, 1956). Correspondingly, there are three types of management functions. These are: operational, tactical and strategic duties or functions. Technical skills and operational functions are narrow-scoped. Human skills and tactical duties are moderately broad-scoped. Conceptual skills and strategic functions are broad-scoped. Market education does not promote matching talents and functions. Today, African youths want to study courses they think would enable them make a lot of money. They like to study accounting, business administration, entrepreneurship, rather than study (talk, think and do) science and traditional engineering programmes (mechanical, electrical, mining, chemical, petroleum, aeronautics, etc.), that would promote rapid industrialization. *Th*ose endowed with narrow-scoped skills should not perform broad-scoped duties. Such a mismatch cannot promote rapid development. Market education precludes scientific planning.

Earlier on in this lecture, the intrinsic value of the learning-man M_n, was modeled as:

$$M_n = M_0 (1+r)^n \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (4)$$

Where M_0 is the objective value before learning commences r is the learning rate and n= 1, 2…., is time.

When many people, N, are involved in the learning process, the value function of the contribution of the learning people to the economic growth of the nation, M_e, becomes:

$$M_e = NM_0 (1+ r)^n \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (5)$$

With notation as in equation (4), maintained. As many millions of people learn in breadth and depth, a point is reached when each type of knowledge and skills begins to enjoy the support of all others and all the knowledge and skills together form an invisible knowledge, skills and competence

(KSC) – network (Ogbimi, 1999). With the development of the KSC-network, the society's economy reaches the point of technological maturity and diversification. The society then achieves industrial maturity or technological puberty. The economy becomes diversified; that is, the various sectors begin to perform efficiently and effectively. Productivity improves dramatically and the society is said to have achieved Industrial Revolution (IR).

This transformation may be likened to that which the spider achieves when it transforms many of its silk-threads into its web. The single thread which the spider spins is a relatively weak structural material which fails readily under any stress regime. However the web made from many of the relatively weak silk-threads is a potent tool which catches the small creatures on which the spider feeds.

When a nation achieves the desirable economic transformation, the contribution of the learning – people to the economic strength of the nation, M'_e, becomes (Ogbimi, 1995):

$$M'_e = MN_0 l (1 + r)^n \quad \text{——————(6)}$$

Or more generally:

$$M''_e = \sum_i \sum_j \sum_k \sum_l \sum_p N_i M_{oj} L_k \quad (1+ r_l)^n p \quad \text{.....(7)}$$

where L represents the transformation, i represents the number and types of people in productive activities, j represents the educational/training levels of the workforce, k represents the breadth and depth of linkages among the knowledge and skills (strength of the network), r represents the rates of learning, and p represents the learning experiences of the different categories of the work force. Equation (7) provides a basis for determining the relevant variables for planning. The Relevant Variables for planning and monitoring industrialisation are:

(i) N_i, the number of people involved in productive activities or employment level in the nation,

(ii) M_{oj}, the level of education/training of those involved in productive activities,

(iii) L_k, the linkages among the knowledge, skills and sectors in the economy,

(iv) r_p, the learning rate or intensity in the economy, and

(v) n_p, the learning experience of the workforce and the society.

All the five variables are learning-related. **Equation (7) indeed represents the benefits derivable from learning. It shows that the benefits from education grow or increase geometrically, whereas the cost of education C_e grows arithmetically** as (Ogbimi, 2006):

$$C_e = \sum_s \sum_t n_s m_t \quad \text{---------- (8)}$$

Where n_s represents the numbers of people educated/trained in various levels or categories and m_t represents the cost of educating/training each person. Business enterprises do not directly care about the total number of people educated or trained in a nation, but it is the duty of a responsible government to ensure that adequate manpower is developed to sustain the economy in a healthy status all the time. As figure 11 shows, it is the duty of the government to plan for and provide employment in quantity and quality to keep an economy in or near the most desirable status position II. This cannot be the concern of the private sector.

Figure 13 is an illustration of the industrialisation process in terms of the five relevant planning variables. **A further analysis of equation (7) suggests that Nigeria must develop 15 (fifteen) million youths in science and technology through the complete cycle of education up to university level and training in acquiring complementary practical skills 4-5 years in the economy after university education, for the economy to have a direction or approach the point of industrial maturity or industrial puberty.**

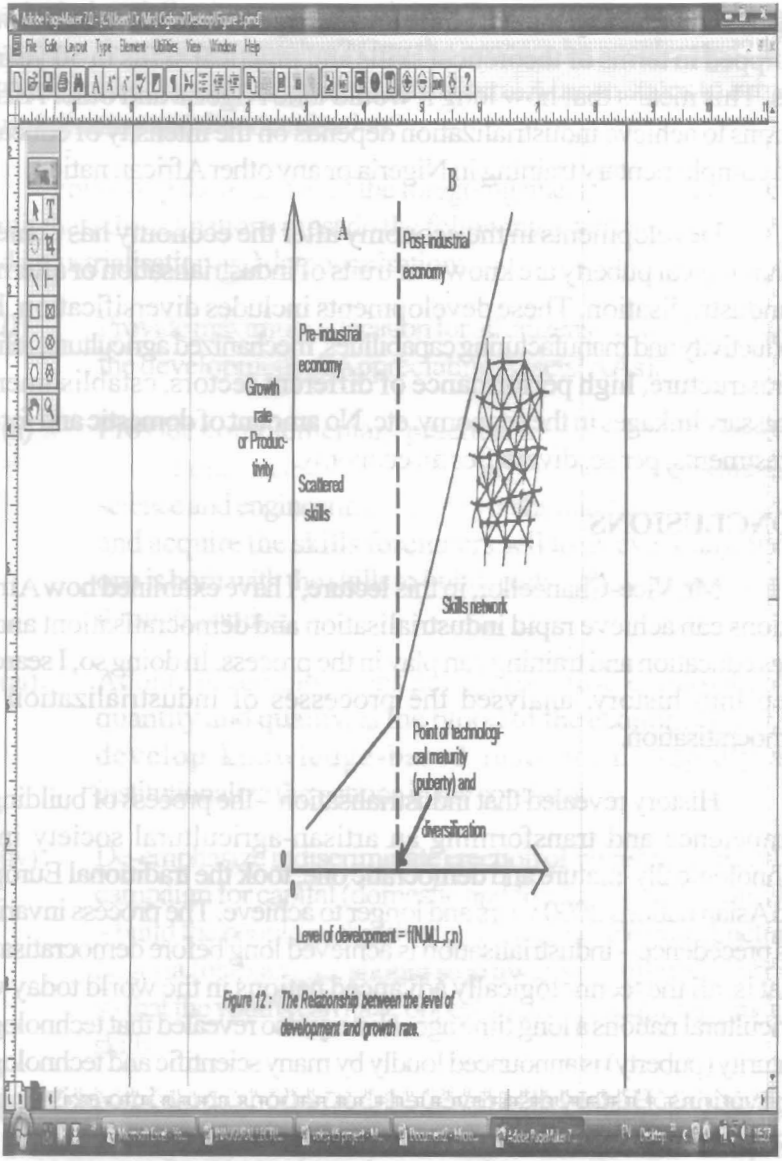


Figure 12: The Relationship between the level of development and growth rate.

Figure 13: The relationship between the level of development and growth rate or productivity.

Nigeria can develop the desirable and indispensable 15 million youths equipped in terms of theoretical skills and practical skills in 50 years or less. This means that how long it would take Nigeria and other African nations to achieve industrialization depends on the intensity of education and complementary training in Nigeria or any other African nation.

Developments in the economy after the economy has achieved technological puberty are known as fruits of industrialisation or aftermath of industrialisation. These developments includes diversification, high productivity and manufacturing capabilities, mechanized agriculture, reliable infrastructure, high performance of different sectors, establishment of necessary linkages in the economy, etc. No amount of domestic and foreign investments, per se, diversifies an economy.

CONCLUSIONS

Mr. Vice-Chancellor, in this lecture, I have examined how African nations can achieve rapid industrialisation and democratisationt and the roles education and training can play in the process. In doing so, I searched deep into history, analysed the processes of industrialization and democratisation.

History revealed that industrialisation – the process of building-up competence and transforming an artisan-agricultural society into a technologically-mature and democratic one, took the traditional European and Asian nations 2000 years and longer to achieve. The process invariably has precedence – industrialisation is achieved long before democratisation. That is, all the technologically advanced nations in the world today were agricultural nations a long time ago. History also revealed that technological maturity (puberty) is announced loudly by many scientific and technological innovations. History also revealed that nations come into existence by accidents – not many nations are planned for by the citizens.

Sadly, history shows that the human development process has always been characterized by sufferings, mass unemployment, poverty and violence. History therefore raises many fundamental questions: Why

does the industrialisation process traditionally take 2000 years and longer? What does the process involve? Can the process be accelerated? How long will it take the present artisan-agricultural African states to achieve industrialisation and democratisation?

Following the analyses of the foregoing questions among others I, submit that African nations must do the following seven things to achieve rapid industrialisation and democratisation:

(i) Provide maximum education for all citizens – always emphasize the development of Appreciating Assets(AAs).

(ii) Provide complementary practical training for graduates of educational institutions especially university graduates in science and engineering – let the youths build our infrastructure and acquire the skills foreigners sell to us every day, for no one is born with the skills to build roads – all skills are acquired through learning.

(iii) Adopt full employment policy, (because employment in quantity and quality, is the blood of the economy), so as to develop knowledge-based institutions rapidly and institutionalize the nations in the continent.

(iv) De-emphasize indiscriminate erection of infrastructure and the campaign for capital (domestic and foreign) investments DAs – build the people so that they can build the relevant structures. Nigeria for example, should stop awarding inflated contracts so that the youths can have opportunities for acquiring practical skills.

(v) Promote five-level (five learning levels) federalism – let there be mayoral, local, state, zonal and central governments, so as to accelerate African progress.

(vi) Promote social justice or fairness, avoid oppression and reduce the occurrence of violence in the continent.

(vii) Reform present African educational systems to reduce the level of indoctrination in them. African educational systems today are indoctrination systems. Reform the systems by offering all social sciences courses and programmes at postgraduate level alone; no social sciences in primary, secondary and bachelor's degree levels. Geography may be offered at all levels. Arts/arts-based and science/science-based courses should be offered at all levels; philosophy should be offered at postgraduate level alone. Medicine should also be offered at postgraduate level alone.

THANK YOU!

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