PROPAGATION OF INDIGENOUS LANGUAGES FOR TECHNOLOGICAL ADVANCEMENT AND SUSTENANCE

Carolyn Mbata
Department of Linguistics and Nigerian Languages, Alvan Ikoku Federal College of Education, Owerri

Chidi Felista Akiyi
Directorate of General Studies, Federal University of Technology, Owerri

Abstract
Every language in the world is a particular people’s indigenous language; in other words, all languages are peculiar to their original owners. Peoples’ technology flourishes and prospers with the help of their languages. As people embrace changes and innovations, both language and technology advance. Technology here refers to the methods, systems and devices which are the result of scientific knowledge that are being used for practical purposes in man’s life. Many African countries are termed underdeveloped and developing because they are scientifically and technologically backward. In fact, it is said that a good percentage of Africans are technophobes as they do not understand the language of science and technology and are therefore afraid to embrace such. It is in a bid to help break this technophobic barrier that the writers embarked on this work. In the course of this work, relevant literature was reviewed; and in doing this, the writers looked at the breakthroughs recorded by the Western world in science and technology. The writers are of the view that for there to be technological advancement and sustenance, especially in the third world countries, the peoples’ indigenous languages have to be put into consideration. Technological knowledge should not be for a select few. It is through indigenous languages that technological knowledge can be stepped down to the whole people. This work suggests amongst other things: the creation of metalinguage; the introduction of indigenous languages in the school curriculum as well as introducing children to their indigenous languages early in life before school age.

Introduction
While most Western countries bask in the glory of being first world nations, many African nations are still branded third world, under-developed and developing countries at the international scene due to many reasons. Chief among these reasons is their backwardness in the area of science and technology. The developed nations are in the forefront in the use and application of science and technology in their daily lives. In other words, their culture is based on science and technology and revolves around such.

The advancement of technology is surely one of the greatest organized and creative achievements of mankind today. The material world around us and the way society functions today are direct manifestations of these advances. The origin of technology lies in the evaluation of human beings and in the intrinsic sense of curiosity in mankind to explore, to know and to understand nature and the world at large. Historically, origins of technology dates back to the beginning of civilized existence. From the earliest days, technology has been a continuous learning process based on day to day activities or experiences which have become the body of knowledge from which applications and understanding of technology have grown.

In the early sixteenth century, scientists such as Isaac Newton, Michael Faraday, Albert Einstein, John Dalton, Rutherford, among others, were pioneers and fathers of modern day technological advancement. These early scientists were concerned about the primitiveness that had gradually engulfed the society in those days. Their curiosity and zeal for technology opened doors to new discoveries and theories.

Bacon (2015, p.55) writes that “human knowledge and human power are co-existence, for ignorance of causes prevents us from producing effects. Nature can only be ruled by being obeyed; for the causes which theory discovers, give the rules which practice applies”. Bacon’s words bring out the purpose of technology which is to discover the laws of nature so as to widen mankind’s perspective and understanding of the world, to increase the basis of man’s material existence, and to help him fight the physical and biological calamities that beset him in his progress through life.

Origin of Technology and Technological Cultures
Technology is the transformation of scientific knowledge into practical reality to better the life of man. It therefore refers to whatever devices,
systems and methods (that are the products of scientific knowledge) which are used for practical purposes in the life of man. Thus, technology, be it simple or complex, high or low, cheap or costly, aims at improving people’s standard of living. In modern times, every type of work is technology-based. The field of technology clearly encompasses agriculture, commerce, engineering, communication, medicine and all other areas of human endeavour where emphasis is basically on thinking out and doing things scientifically. Each of these areas requires some level of education as well as training in the persons who engage in them.

In the past, the Western world started off with a ‘manual’ culture in the area of science and technology just like the developing nations of Africa. They gradually moved to the industrial era which later metamorphosed fully into the modern technological culture. At each point in time, the Western nations did not lose sight of the fact that language is an important component of science and technology and their advancement.

African countries also had their indigenous ‘manual’ technological culture which was based on whatever local scientific knowledge that was available. For instance, before the eighteenth century, apart from agriculture, many African traditional communities engaged in different works such as crafting, moulding, smithing, and iron work. Originally, the Igbo people for example engaged in such works mentioned above based on the type and availability of raw materials and natural resources in their immediate environment. For instance, people from Awka (Anambra state), Nnewre (Imo state) and Abiriba (Abia state) were smiths who specialized in iron work. Emeghara (2014, p. 150) sums this up by writing that, ‘prior to the advent of colonialism in Nigeria, iron work in Igbo land which included iron ore mining, smelting and production had developed into well organized and well established enterprise’. Pottery was done in Okigwe (Imo state), Ini, Ishaagu (Ebonyi state) and iboku (Abia state) where clay was available; Uburu, Okposi and Abakiliki (Ebonyi state) that had brine lakes produced salt while Akwete (Abia state) engaged in textile works like spinning, dyeing and weaving. In line with the above, Aligbo (1981, pp 139-140) explains that:

The Igbo manufactured a wide range of items – agricultural tools, war implements, various kinds of baskets, clothes, earthen jars, household furniture and so on. Some of the crafts which produced these wares could be, and were practised by anybody, but some

were practised only by select communities either because only they had the necessary raw materials, or because the crafts demanded more time than could be combined with full scale farming. But by and large, it could be said that no region of Igbo land lacked specialists in at least one particular craft.

Njoku (2014, p. 15) also asserts that “Agbaja Udi iron workers gave Igbo land its first and perhaps the only indigenous metal currency”. These works by and large involved technological knowledge and experience of some sort which might have been at a low level. Be this as it may, the fact still remains that Africans in general and the Igbo in particular succeeded in at least manufacturing products that met their needs as at that time. But with colonialism, Christianity, education and the general influx of white men into the African traditional setting, things began to change. Africans remained Africans only in the blood running in their veins while their culture changed completely and got replaced by the Western culture. With this turnabout in events, many Africans started biding farewell to those things and practices that had kept them going, including their indigenous technology and language.

On the part of the Igbo people for example; Aligbo (1981, p. 371) laments that:

In fact, it could be said that Igbo language is one of those aspects of Igbo life and culture which came to be almost completely overwhelmed by British imperialism. The Igbo resisted British political and economic domination but allowed their language to fall abject victim of the English language.

Language is said to be the gateway to scientific and technological growth and advancement; and thus, with many African languages falling victim to English language, their technology almost grounded to a halt. This is why many African scholars believe that Western education eroded to a great extent the practice of indigenous science and technology in Africa. Thus, imported products are branded ‘original’ and ‘superior’ while the ones produced indigenously are tagged ‘inferior’ and ‘fake’.

Language and Indigenous Language

Language has been defined and discussed differently by different people for various purposes
based on its appeal to people's interests. Central to all definitions and explanations on language is the fact that it is the lifeline of a people. It is an integral part of human existence as well as the value identity of a people as is seen in the people's culture. Ordinarily, language is a system of communication used by a particular group of people from a particular region or country for talking or writing. This is why it is said that every language is peculiar to its native speakers. Every language is discussed at two levels - the standard form and the varieties (dialects). The standard form of a language "cuts across regional differences, providing a unified means of communication and thus an institutionalized norm..." Crystal (2008, p. 450). The use of this "institutionalized norm" permeates every level or sphere of human life - from its use in the mass media, education, economy, religion to its use in science and technology.

The dialects on the other hand are the subdivisions of a language hence they are 'region-bound'. The distinction between the standard form and the dialects rests on the scope of their usage; while the former is widely used in all official/formal situations, the latter is limited to non formal situations. Whatever be the case, the writers will not dwell on such a distinction, rather they will adopt the use of language in its generic term for the purposes of this work.

Languages can also be discussed based on their status as indigenous, second or foreign. An indigenous language is that which is native to, or is peculiar to the area in which it is used, while a second/foreign language is not native to its users but is however used officially in the area where it is spoken.

An indigenous language (which can also be referred to as mother tongue) is a very important aspect of the people's life (that is, the speakers) because they are supposed to use it daily in everything they do. In other words, an indigenous language is supposed to cater for its speakers' linguistic needs. Based on this, Akindele and Adegbite (2005) in Mbata and Onyemaechi (2014, p. 49) aver that a people's indigenous language/mother tongue is,

The language in which a bi- or multilingual person conducts his everyday activities, in which he has the greatest linguistic facility or intuitive knowledge. The person being a native speaker is exposed to the language twenty four hours daily. He uses the language both at formal and informal interactions. He understands the rules of pronunciation, syntax, lexis and discourse without having course to refer to texts for correct usage of these aspects of his/her mother tongue...

Generally, some indigenous languages are fully developed while some are still undergoing the processes of development (especially most African languages). The rate of development of indigenous languages depends on the native speakers' attitude towards them. The more positive the attitude of native speakers towards their indigenous language, the more their language will develop. Negative attitude however retards language development.

Indigenous languages, just like second/foreign languages are not static. Thus, desirable changes are made in them in the light of new knowledge and experiences. It is against this backdrop that Mbata (2010, p. 69) says that (an indigenous) language develops out of necessity for the speakers of such a language to communicate experiences which arise from their particular environment and circumstance. Therefore, the notion that indigenous languages can only be used in non-formal language situations is erroneous. Any language (be it second/foreign or indigenous) can be used by its speakers to achieve educational, religious, business, social, scientific and technological goals. However, this will only be possible when speakers of the language develop, nurture, promote and preserve it.

Propagation of Indigenous Languages for Technological Advancement and Sustenance

For a people's technology to advance and be sustained, their indigenous language has to be put into use. This will help to translate whatever technological knowledge and experiences there are (no matter how foreign they may seem) into indigenous ones. On the foregoing, Ezekwajiaku (2007, p. 114) opines that, "using a foreign language in cultivating a scientific literacy, makes the Nigerian way, the African regard science as foreign and therefore somehow not indigenous to them". Still on this, Akidi (2014, p.126) quoting Chomsky (1957) and Mohan (1991) adds that what one uses language to do is what he knows about that language. People usually, think best in their indigenous languages. This assertion falls in line with the Sapir-Whorf hypothesis which states that "we dissect nature along lines laid down by our native languages... by the linguistic systems in our minds". Crystal (2008, p. 422). Along this line, researches and observations have shown that many developed nation of the world have developed and sustained their technologies using their indigenous
languages. Let us have a cursory look at some nations that have done well in this regard.

- Germany utilizes its knowledge of science, technology and engineering (STE) in the area of automobile production; manufacturing all the components (right there in Germany). This has made her one of the leading car manufacturers in the world with brands like Mercedes, Volkswagen, Audi etc being very popular in Germany and indeed the whole of European Union (EU). Being a country that is advanced in STE, Germany enjoys a generous share of "World Cash" mostly because their automobiles are used in every part of the world.

- Russia (one of the world powers) is also a country that has advanced in STE with its focus mainly on Aeronautical and Space Engineering. Russia has been a major player in the field of space engineering even while under USSR. She has tremendously expanded her space programme by being a major contributor to the construction of the International Space Station (ISS).

- India, one of the developing countries, has apparently gone ahead of her contemporaries in the advancement of STE. Recently, India launched several space programmes to study the planet Mars, most of which have been successful. Another sector that has seen tremendous transformation in India is agriculture. This is as a result of the introduction of mechanized agricultural practice made possible by the study of Agricultural Engineering. India has also risen to an enviable position in the "computer world". Most of the software and applications used virtually by all information and communication technology (ICT) devices are either designed or written by Indian coders (programmers). She is also a world leading manufacturer of drugs.

- In the same vein, China and Japan are both known all over the world as manufacturers of electronics; most especially ICT devices. Both countries are advanced in the areas of telecommunications, electronics and computer engineering. They are also known for manufacturing medical-related machines. Of late, both countries have been trying their hands on automobile manufacturing which has been proving successful.

- United States of America could be said to be an "all rounder"; producing aircrafts, motor vehicles, electrical and computer products. In San Francisco, California lies the renowned Silicon Valley where most applications and software are designed and written. To this effect, a lot of software companies and ICT companies have set up academies to educate young and upcoming programmers.

- Israel is in the forefront in the area of mechanized agriculture. In fact, agriculture in Israel is a highly developed industry which makes her a major exporter of fresh produce as well as a world leader in agricultural technologies despite the fact that the geography of Israel is not naturally suitable for agriculture. For example, more than half of the land area is desert, and the climate, coupled with lack of water resources do not favour farming. Only 20% of the area is naturally arable. Despite all these, Israel has gone a long way in developing technologies that have boosted their agriculture. In 2008 alone, for example, agriculture represented 2.5% of total gross domestic product (GDP) and 3.6% of Israel’s export. (Wikipedia, 2016: Agriculture in Israel)

All these technological achievements have been possible to a great extent because of the role the peoples’ indigenous languages have played in the various countries involved. There is no gainsaying the fact that the use of indigenous languages paves the way for technological advancement and its sustenance. In other words, it is the people’s language that announces their technology. For many of the products produced in the countries mentioned above, their literatures usually come in the peoples’ indigenous languages. Some however come in the indigenous languages as well as English. It is based on the importance of indigenous languages in technological advancement that Apa (2008, p.6) reports that;

The Chinese President once boasted to the USA and the world that it is only his country that can track down the highly electronic wave-directed missile defence (MD) system, the secret rise in science and technology concealed in a conservative language structure.

Language therefore is a key to people’s technology; once the key is lost, the technology is lost.

Suggestions

Generally speaking, technological knowledge should not be for a select few but for everybody. The best way to make this all-important knowledge accessible to all is through the people’s indigenous language. In other words, (as has been stated before), for a people’s technology to advance and be sustained, special attention has to be paid to
their language. Onwudiliwe and Ugochukwu (2012, p. 2) are of the view that "every language is an efficient tool for encoding the peculiarities of the particular environment in which people live". But sadly, for many of the developing and underdeveloped countries, anything science and technology is still foreign, and poses a barrier simply because their languages do not have sufficient terminologies to cover the areas of science and technology. To break this barrier, conscious efforts should be made to create special terminologies in the individual languages to take care of science and technology. Such terminologies which will boost the vocabularies of the indigenous languages can come in the form of metalanguage. For Emehanjo (2003, p. 5), metalanguage is "the sum total of all the technical or specialized terms needed for discussing anything and everything in that language. It includes all the specialized terms needed for discussing science and technology, the social sciences, the humanistic sciences, education... and contemporary culture". He goes further to observe that the metalanguage of any language is dynamic, that is, it expands so as to cope with the multifarious exigencies of man's daily life. To create new terminologies, Moata and Akidi (2014, p.38) suggest the following methods amongst others: neologism, hybridization, borrowing, loan translation and semantic extension.

It is however not just enough to create terminologies/metalanguages. Efforts should also be made to organize workshops, seminars and conferences in the indigenous languages where such terminologies that have been created can be discussed and information on them disseminated. Such bodies like the Nigerian Educational Research and Development Council (NERDC) and the various language associations in conjunction with the Ministry of Education can take care of such a project.

Making indigenous languages compulsory in the primary and secondary school curriculum as well as in the General Studies Curriculum in tertiary institutions will help a lot in the transfer of the knowledge of the languages to the younger generation. It will also help our young ones to grasp the nuances and the very essence of their indigenous languages which are part of their culture. Echerue (1982, p. 228) harps more on this when he writes that "a language survives and prospers only to the extent that it is preserved and enriched by each new generation of speakers, each in its own season". Apart from the school, families should introduce their children to their indigenous languages early enough so as to sustain their interest in the languages. In fact, it is at this level when the language acquisition device (LAD) is at its peak that the proper foundation should be laid before children reach school age.

**Conclusion**

The secret of a nation's greatness lies in the power of her language. That a nation is well developed rests squarely on her people and of course their language. Uzoezi (2011, p. 97) writes that "development is all about people and if development is all about people, then, we must of necessity seek to empower them by making them draw inspiration" from what they have around them and language is just one of such things.

As has been highlighted, technology plays a great part in man's day to day life in the society. When a society knows more about its environment, and has enough manpower, then it is already on the right path to technological development. Making use of the indigenous language will enhance this development and also help in sustaining it. All hope is not lost for African countries in terms of technological advancement and sustenance. In fact, about six countries in Africa have included technological park construction, that is, technological development and innovation in their development goals. Along this line, the Nigeria of today for example, is no doubt gradually being immersed in the technological advancements of the world. This is evident in the number of manufacturing industries in the country ranging from food processing industries, automobile assembling industries, oil refineries, to medical and pharmaceutical companies. One of the setbacks here lies in the use of a second language – English. Whatever technological developments there are in Nigeria, need to be stepped down to the Nigerian populace in their indigenous languages. This will go a long way in bringing technological knowledge to the doorstep of the people and also involve them in the technological work.

To sum up, technology will continue to advance in the lives of people as years go by. What is important is for the people to ensure that the advancements are sustained. One way of sustaining a people's technological advancements is through their indigenous language.
REFERENCES


