

# SCIENCE AND TECHNOLOGY FOR HUMAN RESOURCE DEVELOPMENT THROUGH RESEARCH AND TRAINING FOR POVERTY ALLEVIATION

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## **Abstract**

This paper focuses on the strategies for effective harnessing of human resources through science and technology education. It fully acknowledges the fact that; effective manpower development can bring about positive development of the living standard of the populace and efficient production of goods and services. From the human resources' perspective, the challenge is to enhance the quality of scientific and technological development and good livelihood by pervading meaningful materials and tools in a way of meeting both challenges at once. The paper therefore, examines the state of the art of science and technology education, benefits that could accrue from effective planning research and training of manpower and strategies for achieving a state of minimal poverty standard.

## **Introduction**

There are at least 820 million if not more people out of work or underemployment worldwide. Taking into account their families, can you imagine the anguish and suffering this involves? What are the causes of unemployment? Will there ever be a solution? There are questions that are to be answered in the Diaspora, it is an emergency in several developed countries but it also worries developing nations such as Nigeria,, it has struck when it once seemed non-existent. It affects hundreds of millions of others; it could be just around the corner, poverty (Fasina, 2000). Anyone who did not labour becomes poor being unable to satisfy his needs of life: from time past until eternity, everyone would have to work in order to avoid or conquer poverty. The system must therefore, provide the tools needed to work for and earn decent living. Poverty Alleviation is all about increasing the capacity of every individual to increase personal wealth through a legitimate effort such as physique for gainful employment.

## **An Implacable March**

Unemployment has hit all sectors of the economy one by one, first, agriculture, with its increased mechanization, which has been affected by the energy crises from the 1970's on and now, the service sector commerce, education a sector previously considered unusable. Twenty years ago unemployment rate in excess of 2 or 3 percent would have caused great alarm. Today, an industrialization nation is doing well if unemployment is kept below 5 or 6 percent and many develop nations have much higher rates JLO (1996), says that, an unemployed person is one who is without work is prepared to work and is actively looking for work but what about a person who does not have a permanent full-time job or one who manages to work just a few hours a week? Part-time work is considered different from one country to another.

The idea of poverty alleviation indeed is a new appreciation of possible solution to the current problems of millions of unemployed Nigerians. At the inception of the Administration of Olusegun Obasanjo, he pleasantly, abounded everyone with people oriented programmes, which made him to be lorded by all honest Nigerians. The regime of Ibrahim Babangida and late Sani Abacha have a impoverish Nigerians. That is only the poverty alleviation programmes coupled with the former on- going-FEAP (family Economical Advancement Programme) are launched to save Nigerians from picking food from dustbins.

Shaw (2000), admonished everyone; Act well your part, for there the honour lies". The fuel crisis of early June, 2000 confirmed that Nigerians will never again accept subjugation. Nigeria continues to exemplify a classical situation of "so much to do, so little done" because we continue to live the life of "government should do this government should do that and not "let us do this and will do that".

## **Science and Technology in Education**

Education deals with the availability and sustainability of knowledge and its even increasing quality

and quantum from generation to generation into eternity. From this self explanatory definition, the role could be actualized through the teaching of Science and Technology to students (notably of secondary or/and tertiary institutions of learning) and to graduates of such institutions on how science and technology could be attained through coaching classes as well as small-scale industrial production workshops in such simple processes as soap and detergent production (Solid and Liquid), iodized salt production (table salt) cheap paints, vegetable oil, etc.

The high quality standard of education, which was built in Nigeria between 1910 and 1980, was destroyed by those who ruled Nigeria within the period 1980 — 1999. Even in the past one year (1999-2000), one cannot honestly talk of any encouraging effort to correct the despicable situation by any of the three tiers of government (local, state and federal).

### **The High Price of Unemployment and Poverty**

The economic and social costs of unemployment are enormous, and they result "not only from the direct expense of welfare payment to the unemployed but also from losses in term of fiscal facility to which unemployed could contribute were they thrive (E.U.C., 1996) and unemployment benefits are becoming increasingly burdensome not only for government but also for the employed, who are subject to increased taxes.

Unemployment is not just a matter of facts and figures only but individual dreams are the result, for this plague strikes for men, women and youth of every social class, combined with all the other problems of these "last days", unemployment can prove to be a tremendous burden to the entire society. Especially, if hit by "long term unemployment", all else being equal, the person who has been out of work for a long time will find it even more difficult to get a job. Sadly, some may never be employed again.

Psychologists find that among day's unemployed, psychiatric and psychological problems are increased as well as emotional instability, frustration, and progressive apathy, and loss of self-respect. When a person with children to care for loses a job, it is terrible personal tragedy. The world has collapsed around these—Security has evaporated. Today, in fact, some experts note the emergence of an "anticipatory anxiety related to the possibility of losing one's job. The anxiety can seriously affect family relations and can have more tragic results, may indicate. Furthermore, the difficult of breaking into the labour market is among the probable causes of violence and social alienation of young people.

### **Forecasts and Setbacks**

Some economists had anticipated very different scenarios. John Mayard Keynes (1930) has optimistically forecasted. "Work for all" within the next 50 years, and decades full employment has been considered on attainable goal UNO (1945): set as a goal the rapid achievement of full employment. Until it was believed that progress would mean a job and few hours at work for all. But things have not turned out that way. The serious recession of the last decade has caused the "worst global employment crisis since the great Depression of the 30's ILO (1996). In South Africa, at least 3.6 million people are out of work, including some 3 million Black Africans. Even Japan with over two million out of work last year is going through a crisis.

### **A Social Plague**

Since it may strike anyone, unemployment is a social plague. Some countries provide various mechanisms for safeguarding those who are still working, for example, a reduced workweek with reduced pay. This may however, damage the prospects of other looking for work.

Both the employed and the unemployed protest more and more frequently about job related problems. But while the unemployed call for view job; the ones having a job try to protect their own security—two objectives that are not always compatible. Those with a job are often invited to work within wage hours. Those who are out-stay-out, these are the risk that society may split into, on the one hand, the super employed and on the other, the alienated, which are almost completely dependent on the goodwill of the others.

Effective poverty alleviates through science and technology education requires that the professionals keep update with the developments in their respective fields and extend their professional skills to others. This is necessary to remain competent and relevant. This can be achieved through continuing professional development (CPD) activities. Different individual have different career path and specialties, it is not possible therefore, to be too prescriptive with regard to the exact nature of professional

development activities. These are determined partly by the demands of your job and the extend of the personal ambition.

### **Research and Development Programmes as Job Creator**

Research and development (R & D) activities generally cover programmes divided unto basic research, applied research and development. R & D basically, involves the generation of innovative techniques which when applied can bring about a change in production processes and subsequently creating jobs on both small scale and big industries. The importance of R & D in establishing a solid base for local raw materials utilisation cannot be over emphasized, while raw materials processing is one of the aspects of industrial production, optimal utilization of local raw materials can only be achieved through effective R & D. The current low level of industrial output being experienced in the country is due to lack of coordinated R & D programmes to stimulate use of local raw materials resulting in low patronage of local producers, therefore, lowering their average income earning. Researchers have succeeded in the following ways:

- Improve the quality and develop new uses for existing local raw materials.
- Develop suitable substitutes for imported raw materials from locally available resources.
- Provide appropriate indigenous technology to process local raw materials.
- Develop raw materials and products from available raw materials.
- Make the utilization of local raw materials environmentally friendly.
- Provide needed information and documentation that can lead to better understanding and use of local raw materials.

Private sector participation in R & D although minimal, has continued to be on the increase with new innovative techniques constantly resulted in the emergence of new products in our market made entirely from local materials. Most importantly, using indigenous technology and therefore lifting the income of the average citizen.

### **Freedom from Poverty and Unemployment**

Underlying the lack of work, there is a roof cause-human selfishness and greed, the problems will only be resolved by the removal of human dominion by living and working under a just and fair ruler ship where greed will not exist in the society. This could be achieved by looking inwards that is creating work at home and outside, the home, these works could be:

- Baby-sitting for childcare.
- Selling homegrown vegetable or flowers.
- Sewing, altering and repairing clothing.
- Piecework for manufacturers.
- Baking and food preparation.
- Quilting, crocheting knitting, making macrame, pottery other crafts.
- Upholstery.
- Bookkeeping, typing, home computer services,
- Hairdressing.
- Washing and waxing cars.
- Lock, repair and maintain (workshop at home).
- Repairs: appliance of all kinds.
- Handy man jobs, siding houses; building cabinets, doors, porches; painting, fencing, roofing.
- Farm work, crops, pricking fruit.
- Interior landscaping and plant care at offices, banks, shopping plazas and atriums, lobbies.
- " Property management, super intendent.
- Insurance, real estate.
- " Carpet installation, clearing.
- Newspaper routes (adults and children) other delivery services; and bills for municipalities
- Land reaping, tree trimming, lawn care, wooding.
- " School bus driver.
- Photographic (portraits and public events).

- Swap work, barter can repair for electrical work, sewing for plumbing, etc.

### **Enabling Environment and the Government**

The Chief Economic Adviser to the President, Olusegun Obasanjo: Nigerians Economic Policy (1999 - 2003): On poverty alleviation and reduction, which is the first priority; it shall be adopted as a means to the achievement of accelerated economic growth and the critical elimination of poverty generally. The measures being employed are to empower Nigerians to be more economically productive, with a view to improving their quality of life. The measures are to be people oriented. A poverty reduction fund has been established with an initial sum of #10 billion for the creation of 200,000 jobs in the 2000 fiscal year. The Poverty Alleviation Programme is being implemented as a multi-faceted programme involving many ministries with the co-operation and commitment of the tiers of Government. Specific sectoral targets achievements are indicated with relevant sectors.

It is significant to note that these measures that reduce the incidence of poverty are also capable of accelerating economic growth.

Specifically, the measures planned to address the twin problems of low economic growth and high poverty incident by this Administration include the provision of 5 million jobs which, also involves the training and settlement of at least 50% of tertiary institution graduates estimated at about 130,000 per annum.

Government will enhance access to honouring by the provision of infrastructure, promotion, competition and making credit more readily available. Other components include the Universal Basic Education Scheme (U.B.E.), rural electrification and water supply; improved health services through the primary Health Care Scheme and establishment of a small and medium Scale Industry Development Agency (SIMDA) for promotion of these enterprises.

As the government works hard to create the enabling environment for industrialization, the challenge to all shareholders is for us to make hay while it is day because the wind does not blow for him who has no destination to sail to.

### **Conclusion**

Finally, the country's industrial theatre which has been the scene of the application of science and technology majority has continued to depend on research results which emanate largely from public findings. In the past ten years however, the economy has been subjected to the realities of competition for scarce resource; science and technology, like other Nigerian Institutions, now operates in the context of democratic decision making and interest group politics. Fasina (2000): science and technology provides better things for better living" One way of doing this is to convince Nigerians that science and technology education is indeed an applied science by applying it to create wealth.

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