

**REDUCING UNEMPLOYMENT AND POVERTY LEVEL THROUGH
MATHEMATICS EDUCATION IN NIGERIA**

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Abstract

The attainment of economic freedom from the menaces of youth unemployment has been the preoccupation of many governments in Nigeria. There have been many programmes and policies of the government that were targeted at either reducing or eradicating youths' unemployment over the years. Some of these programmes and policies have not gone a long way in achieving their goals. This paper, therefore, posited a more realistic approach to this goal. It discussed youth unemployment and how it leads to poverty which debases the Gross National Product (GNP) of Nigeria. It also examined the concept of poverty and possible factors that may lead to youth unemployment and its consequences. On the whole, it suggested in specific terms how youth unemployment and poverty level can be reduced through mathematics education.

Introduction

Mathematics has been acclaimed to be the most important and core subject of all the subjects in school curriculum. This is as a result of its relevance in all human endeavour. Azuka (2000) in Galadima and Okogbenin (2012) exposed that for any nation to survive and develop; it has to improve on its teaching and learning of Mathematics which is the basis for technological development. Mathematics is a tool that can be used in our daily life to overcome the difficulties faced, especially the difficulties of unemployment and poverty.

In the words of Iju (2008), Mathematics is considered very vital, not only as a field of study and research, but also indispensable to every field of intellectual and human endeavour. From the above assertion, the referred areas include the social, economic, political, geographical, scientific and technological aspects of man. These areas are centered on numbers. This is why many establishments, corporate bodies, and even government, base their assessment of employees and/or job seekers on mathematics literacy. This is more in such disciplines as statistics, accounts, arithmetic, engineering, etc, where numbers are predominant and form integral part.

Therefore, the importance of mathematics education in the development of total man and hence reducing unemployment and poverty level cannot be over emphasized. Mathematics has the economic benefits of preparing young people for the numeracy demands of modern work place and raising the overall skill levels of the work force. It has improved access for large numbers of young people to post school education and training opportunities and laying stronger foundation to skills for lifelong learning.

In spite of all these laudable benefits of mathematics, especially in making one employable, and hence reduce poverty level, many young people or unemployed youths have not accorded Mathematics the place due to it. Many school children learn mathematics only for them to get a

pass so as to gain admission into high institutions. They invariably forget that mathematics is the basis of their survival in whatever career they may choose.

In the light of this, this paper will look at how to reduce unemployment and poverty level through mathematics education. It will discuss such concepts like unemployment, poverty, causes of unemployment and poverty and possible ways of reducing them through mathematics education.

Unemployment

Unemployment is a situation whereby people who are capable and willing to work have no sufficient work to occupy them effectively. It is a situation in which people who are capable of working on wage employment or self – engagement, and who are qualified by age to work legally but cannot secure employment. Such employment can be of permanent, contractual or part-time in nature.

Unemployment, in terms of scope, is a global issue, but it is rampant in the third world countries, with its social, economic, political and psychological consequences. If youth unemployment is on the increase, it is an indication of far more complex problems. Unemployed people in Nigerians can be grouped into two categories: the older unemployed, who lost their jobs through retrenchment, redundancy or bankruptcy, and the younger unemployed, most of who have never tasted what it is to be employed. In essence, youth unemployment can be described as a conglomerate of youth with diverse background, willing and able to work, but cannot find any.

In the light of the above, the most worrisome thing is that most of these youths who lack jobs are at the peak of their productivity. The situation becomes more pathetic when some of these youths are not just unemployed or underemployed but most of them are unemployable. What accounts to their *unemployability* is their lack of skills and mental alertness. These skills and mental alertness can be obtained through mathematics education.

Unemployment is often used as a measure of the health of the economy. The most frequently cited measure of unemployment is the ratio of the number of unemployment persons to the number of people in the labour force. Because unemployment plays such an important role in shaping our perceptions of the economy, experts have long raised concerns about the way the government defines the term.

Summarily, the criteria for being “unemployed” exclude people who might want to work but who have not been actively searching in the past four weeks-perhaps because they have no hope for employment at the time, or are unable to search because of, say, health problems or family commitments. The definition also excludes people who are underemployed like those who want to work full time, but can find only a part-time job.

Poverty

Poverty has been viewed from different dimensions – philosophically, socially, economically and financially. Poverty is not only a thing of the pocket but a thing of the mind. That is, it does not merely entail low levels of income or expenditure. Sen (1992) defined poverty as a condition that results in an absence of the freedom to choose arising from a lack of what he refers to as the capability to function effectively in society. This buttresses the point that poverty is far beyond the notion as being solely related to a lack of financial resources. In other words, inadequate education could, in itself, be considered as a form of poverty in many societies.

According to encyclopedia Americana vol. 22, poverty is defined as an insufficiency of means relating to human needs. As reported in Oye (2012), Townsend, Davidson and Whithead (1992) defined poverty as lack of material resources of certain duration and to such extent that participation in normal activities and possession of amenities and living conditions becomes impossible or very limited. In other words, poverty is an impediment to meeting one’s needs, both

personal and societal. From this point of view, Harry (1974) and Aluko (1975) in their independent works, defined poverty as a situation where the resources of individuals or families are inadequate to provide a socially acceptable standard of living.

The German government in 1992 described poor people as those who are unable to live a decent life” while defining poverty as “ not having enough to eat, a high rate of infant mortality, a low life expectancy, low educational opportunities, poor water, inadequate health care, unfit housing and a lack of active participation in the decision making process”. In other words, one is counted as being poor if one fails to measure up to the acceptable standard of living in terms of income.

In all, poverty can either be absolute or relative. It is absolute when there are inadequate financial resources to maintain an acceptable minimum of standard of living. That is, the lack of financial resources needed to provide the basic food need. Of course, to determine the poverty statu of a person, a poverty line has to be set. A poverty line commonly used by the World Bank for making international comparisons is US\$1 per person per day, or sometimes US\$2 per person per day.

On the other hand, relative poverty is related to the society. That is how healthy and balanced the society is. This implies that a person who may not be regarded as poor in one society may (with the same financial resources) be considered as poor in another society. For example, a person living in a society devoid of basic social amenities is regarded as poor irrespective of the amount of financial resources at the disposal. The reverse is the case for a person with low financial resources and in a rich society.

Both absolute and relative poverty are relevant to education. There is huge relationship between poverty, educational attainment, and employment opportunities. For example, lack of

financial resources may limit school attendance among the absolutely poor in developing countries. Again, better educated people have a greater probability of being employed, are economically more productive, and therefore, earn higher incomes. Since mathematics education is the bedrock of all kinds of education, therefore serious attention should be given to it if poverty and unemployment levels are to be reduced.

Causes of Unemployment and Increase in Poverty

Generally speaking, unemployment is caused by the state of nation's economy. It therefore implies that youth unemployment is highly dependent on the overall status of the economy. The Gross National Product (GNP) growth, determined by the economic activities is a major factor that influences the chances of young people finding a job. Low investment, low or negative Gross Domestic Product (GDP) growth and economic recession are major factors determining the rate of demand for labour.

According to Abefe-Balogun and Nwankpa (2010) unemployment is caused by:

- i. Poor industrialization and closure of the few operating firms to stiff economic conditions.
- ii. Inability of public and private owned companies to hire the growing army of job seekers due to economic meltdown resulting to higher cost of production and closure of some establishments. Graham (2001) supports that most developing countries do not have industries that are capable of employing enough workers.
- iii. Overdependence on white-collar jobs because of egoism, pride – “*I can't do*” spirit majorly due to lack of entrepreneurial training and marketable skills that could have enabled them go on private businesses.

- iv. Students at college and tertiary levels, even during the colonial era and presently too, were theoretically trained for clerical/technical duties but not to start new business on their own.
- v. The evils of nepotism, political affiliation and ethnicity, discrimination, poor investment in business due to inflation occasioned by political instability cannot be overstated in Nigeria.

Further to these, there is this factor of exorbitant cost of accessing education and the stringent requirements (at least a credit in mathematics) for admission which threatens many youths from furthering their education. This act left them with no easier option than to be roaming the streets of cities and in turn become poor. Servaas (2008) added that many find it difficult to go to school and so end up with low paper qualification, which may not permit them to get better employment. Many other things have been identified to be the major causes of unemployment. These include: increase in population, increase in both male and female graduates, competition in specific industries or companies, lack of training facilities, bad leadership and finally advances in science and technology.

In all these, this paper intends to establish that one of the major factors responsible for unemployment is poor mathematics education system. It will be recalled that in 1958, the International Congress of Mathematics highlighted the need for mathematics curriculum reforms at all levels of education all over the world during its first conference scheduled at Edinburgh, Scotland. Prior to this call, the then mathematics curricula world wide as noted by Obodo (1997), were in great shortage in meeting the technical needs for mathematicians, physicists, and engineers. This implies that the secondary school mathematics curricula, for instance, though rigorous and difficult, was outmoded and failed to prepare students to cope with modern sciences.

As it stands now, though the restructure was made, but the way some instructors teach mathematics is not beneficial to the students as it does not directly correspond to the prevailing economic activities outside the school system, (Obodo, 1997). In essence, the students are taught theoretically instead of practically so as to provide them useful skills that will mould them as professionals. Of course, the end result of such method of teaching mathematics is the production of youths whose skills are not transferable and do not replicate the current economic trends in the Nigerian job market. This in essence will lead to full time unemployment.

In all, one can see that education; or rather mathematics education is an instrument in nation building. If it is neglected, as the case in Nigeria, the obvious effect will be unemployment and poverty, both absolute and relative poverty.

Ways of reducing unemployment and poverty level through mathematics education.

Since mathematics is the queen of all sciences (Anaechie, 2007); and the basis for all success in academic world, effort should be made in making it interesting and practical oriented. This will enable students to develop positive attitude towards the learning of the subject. In essence, the following ways can be adopted in order to reduce youth unemployment and poverty level in Nigeria:

1. Positive attitude towards mathematics
2. Construction of mathematics-related instructional materials for sales
3. Opening a rehabilitation centre (popularly called lesson centres)
4. Organizing private lessons for unemployed youths.
5. Preparing handouts or compilation past questions and answers on past interview questions for Sale.

Positive attitude towards mathematics

A positive attitude to Mathematics is the first step towards reducing an impending unemployment and poverty level at the long run. It is only when Mathematics is appreciated by the learners, that the proceeds (reducing unemployment and poverty level) can be properly harnessed.

Often times, people find it difficult to understand mathematics, not because of its abstract nature, but because of what Obodo (1997) called Mathematicsphobia. He went further to put forward that the way Nigerians feel, think, and act towards Mathematics influences greatly mathematics education. In the light of this, when mathematics education is adversely affected, the end result will be that one would lock oneself out to the numerous benefits of Mathematics education. Of all the laudable benefits, is adequate employment opportunities which in turn will reduce or eradicate poverty.

Construction of mathematics-related instructional materials for sales

Mathematics, though sometimes abstract in nature, can be demystified with the use of appropriate instructional materials and mathematics laboratory in its teaching and learning. This will make the subject practical oriented. An unemployed youth can learn how to construct many mathematics models and materials and put them for sales, thereby being self employed and reducing poverty level. He can even go further and employ other youths in the business. By this, he will not only get himself employed, but also empower others. This act is actually a serious blow to unemployment and poverty.

Opening a rehabilitation centre (popularly called lesson centres)

Furthermore, since mathematics poses a big threat to many, one can easily open a rehabilitation centre (popularly called lesson centres) purely on mathematics lessons. Though many of such centers have being, but one can just concentrate on mathematics with laboratory

method as the only emphasized method. This will certainly occupy the initiator as a self employed individual. There is no doubt; the individual is certainly going to make it because mathematics has dealt with many people. At the long run, he may turn to become an employer of labour, thereby reducing unemployment and poverty level, not only for himself but also for those of his/her employees.

Organizing private lessons for unemployed youths

It has become a common trend in the Nigerian society, that the major elimination method used to lay off job seekers is the use of aptitude tests characterized by mathematical manipulations and reasoning. This means that only those students who did not toy with mathematics education will be selected for the few white collar jobs available. This will certainly lay many others off as unemployed youths. If on the contrary, mathematics education is upheld by all and sundry, the youths will be employable and self reliant, thereby reducing poverty level.

There is still a remedy for those who lost their opportunities to learn mathematics during their school days. Those people can access the services of private mathematics educators. Therefore, since many people need this type of service, one can start a private lesson or consultancy services for such people. This will certainly provide employment for the youth who ventured into this.

Preparing handouts or compilation past questions and answers on past interview questions for Sale

According to an Igbo proverb: When constructing a new road, it must always take dressing from the old one. This implies that one can easily make it in an employment interview if he has access to past questions and answers to such interviews. These questions and answers, especially in mathematics, can be compiled by an unemployed youth and be put for sales.

Again, simplified handouts or textbooks on mathematical concepts and formulae can be prepared for learning of mathematics. These materials when put to sales will certainly provide the individual with somewhat of employment.

Finally, from 1986 till now, acquisition of special and relevant skills and creation of jobs have become the focal points of many Nigerian Government policies. It started with the acquisition of vocational skills, since the education system operated since post-independence placed much emphasis on academic excellence rather than skill acquisition which can prepare the individual for a more useful and fulfilling life within the society. This, of course, cannot be achieved without mathematical experience since mathematics education encourages exploration and manipulation by the students.

Conclusion

This paper has X-rayed the importance of mathematics in the building of an employable individual. It emphasized that mathematics is needed in all aspects of life for effective living. Various concepts such as unemployment and poverty were discussed. Again, the causes of unemployment and poverty, especially, that of neglect of mathematics education, were brought to the lime light. Finally, possible ways unemployment and poverty level can be reduced through mathematics education were also discussed.

Reference

- Anaeché, K.C (2007). Role of Mathematics Games in Teaching and Learning of Mathematics in Junior Secondary Schools in Ideato North Local Government Area of Imo State. *Unpublished Project*. ESUT
- Anonymous (2012). Youths Unemployment. *Afro Asian Journal of Social Science*, vol. 3 NO. 3.4 (Quarter IV 2012) ISSN: 2229 – 5313. p. 2 -9
- Aluko, S. A (1975). Poverty: its Remedies in Poverty in Nigeria Proceedings of the 1975 *Annual Conference of the Nigerian Economic Society* held at *Ibadan*.

- Azuka, F.B. (2000). Mathematics in Technological Development: Focus on theNext Millennium – implications for Secondary Education. *The Journal of The Mathematical Association of Nigeria*, 25 (1), 74
- Harry, J (1974) *Economic Concept in Understanding Economic Essays in Public*. Human Development Report United Nation Development Programme.
- Iju, C.O (2008). Relationship between mathematical knowledge of Nigeria Certificate in Education (NCE) mathematics students and their performance in Computer science. *Abacus. The journal of the Mathematical Association of Nigeria*, 8 -13
- Obodo, G.C. (1997). *Principles & Practice of Mathematics Education in Nigeria*. Enugu: General Studies Division ESUT, Nigeria.
- Oye, N.D. (2012). Inflation and Poverty in Nigeria: The role of ICT in poverty reduction. *Universal Journal of Management & Social Sciences* 2 (7), p. 22 - 26
- Sen, A. (1992). *Inequality Re-examined*. Oxford: Oxford University Press.
- Servaa, V.B (2008). *Poverty and Education*. Paris France: The International Institute for Educational Planning (IIEP)
- Townsend, P; Davidson, N & Whithead, M (1992). *The Black Report and theHealth: Inequalities in Health* (2nd ed). London: Penguin Books