THE EFFICIENCY OF THE SCIENTIFIC APPROACH IN ANALYSING THE BREAK-POINT IN A MULTI-PRODUCT FIRM

Sunday A. Effiong, (Ph.D); Akabom I. Asuquo, (Ph.D) and Chimaobi Okere (Esq)

Abstract

A major challenge in break-even analysis for multi-product firms is the problem of obtaining a single per unit contribution, single unit selling price and contribution margin ratio (CMR) that is representative of all the products in the firms’ sales mix structure. This paper introduces a scientific approach, using weighted average, as against the simple average used in the traditional approach. Using the Weighted Average Unit Contribution Margin (WAUCM) as a stepping stone, the paper covers up with the Weighted Average Unit Selling Price (WAUSP) and the Weighted Average Contribution Margin Ratio (WACMR). These three averages presented scientific solutions to the multi-product break-even analysis problems. In comparing the traditional approach with the scientific approach, the paper adopts “contribution by sales mix analysis” to ascertain the approach that gives the optimal sales mix. It was observed that the scientific approach achieved lower break-even point in units and sales value than the traditional approach. The success was attributed to the optimal sales mix achieved by the scientific method. Therefore the scientific approach is recommended for use by companies involved in the multi-product break-even analysis and problems relating to multi-product break-even computations.

Introduction

The Break-Even Analysis technically known as the Cost – Volume – Profit (CVP) analysis, represents the application of marginal costing principles that seek to show the relationship between cost, volume and profit at different activity levels which could be relied upon for short-term planning and decision making. Owing to the centrality of the break-even point (BEP) on C-V-P analysis, break-even analysis is often used in place of CVP analysis. Break-even analysis is one of the most important tools for management decision. It takes into consideration the nature of variable costs and the capacity of fixed costs.

The turning point in break-even analysis is the break-even point. The break-even point is the sales volume (activity level) in units or in sales value, where total sales revenue equals total cost. It represents the point at which the firm makes no profit and makes no loss. It depicts the point where the firm earns enough contribution to pay for fixed costs only. At the break-even point, all expenses of the company are effectively paid for. The essence of this analysis is to help in assessing the profit potentials of the firm beyond the break-even point. It is an analytical model for achieving targeted results.

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Some of the assumptions of break-even analysis according to Lucey (2002) include:

1. All costs must be resolved into fixed and variable elements.
2. Fixed cost must remain constant and variable costs vary proportionately with activity level.
3. Over the activity range being considered, cost and revenue behave in a linear relationship.
4. The only thing affecting costs and revenues is volume.
5. Stocks are valued at marginal costs only.

Break-even point in volume is given as: Total fixed-cost divided by contribution per unit; break-even point in sales value is given as Total fixed cost divided by the contribution margin ratio (CMR). The contribution margin ratio is obtained by dividing contribution per unit (or total contribution) by the selling price per unit (or total sales revenue), respectively. For a mono-product firm, break-even analysis is simple to apply. A major challenge arises in the case of a multi-product firm. While it is easier to compute contribution per unit and the contribution margin ratio in a mono-product situation, it becomes more tasking in a multi-product environment, owing to the fact that there are more than one product, each with a different variable cost, different price and different contribution margin.

Considering the usefulness of the break-even analysis as a short-run decision model, the purpose of the paper is to show the deficiencies inherent in the traditional approach when applied in a multi-product environment and to present a scientific approach which is not only useful in a multi-product break-even analysis but also applied in selecting optimal sales mix.

Adeniji (2007) noted that the break-even analysis can be useful in short-run decisions such as choice of sales mix. In multi-product break-even analysis, firms seek to establish a sales mix at which the sum of the individual contributions from all the products in the sales mix structure is enough to pay for the fixed costs.

In attempting a solution, the traditional approach adopts the use of simple average, where unit contribution is divided by unit sales revenue to arrive at the contribution margin ratio, which is applied as a divisor to the total fixed cost to produce the assumed break-even point in sales value. Break-even point in volume is then arrived at by first apportioning the total sales value (at break-even point) to individual products using the sales proportion (or mix). Thereafter, the individual contributions are divided by the corresponding unit selling prices to arrive at the break-even point in unit for each product, which adds-up to the break-even point in unit for all the products.

In laying credence to the scientific approach, Hanson (2007) stated as follows: “to perform break-even analysis in a multi-product organisation, a constant sales mix must be assumed, or all products must have the same contribution margin ratio”. According to his argument, this assumption
facilitates the calculation of the weighted average contribution per mix. Continuing in this line of thought, Effiong (2004) presented the Weighted Average Unit Contribution Margin (WAUCM), which is applied in calculating the break-even point in unit, for a multi-product firm.

In presenting the Weighted Average Unit Contribution Margin (WAUCM), Effiong (2004) further explained that the sales mix, in the sense of break-even analysis is the proportion of each of the products required for combination in the company’s sales structure in order to break-even. Hence, the sales mix is used in computing the WAUCM. The Weighted Average Unit Contribution Margin (WAUCM) is defined as the average of the several products unit contribution margins, weighted by the relative sales proportion of each product.

The WAUCM can be computed using the formula:

\[
\text{WAUCM} = \frac{\text{CM}_1 \times \text{PS}_1}{\text{TSM}} + \frac{\text{CM}_2 \times \text{PS}_2}{\text{TSM}} + \frac{\text{CM}_3 \times \text{PS}_3}{\text{TSM}} + \ldots + \frac{\text{CM}_n \times \text{PS}_n}{\text{TSM}}
\]

Where:
- \(\text{WAUCM}\) = Weighted Average Unit Contribution Margin
- \(\text{CM}_1, \text{CM}_2, \ldots, \text{CM}_n\) = Unit Contribution Margin for Products 1 to \(n\) in the sales mix structure
- \(\text{PS}_1, \text{PS}_2, \ldots, \text{PS}_n\) = Proportion of sales for products 1 to \(n\) in the sales mix structure
- \(\text{TSM}\) = Total sales from the combined proportion of all the products, (Effiong 2004).

Analysis of the formula reveals that in arriving at a composite unit contribution margin, which represents a single contribution per unit for all the products in the sales mix, here referred to as the WAUCM, emphasis is not laid on the individual contributions only, rather the corresponding sales proportion is attached as a weight. This is an improvement on the simple average method which considers only the contribution made by individual products. The essence of this weighting is to match profitability with acceptability. While contribution per unit defines profitability, sales proportion represents market (consumer) acceptability.
The WAUCM thus calculated represents a single contribution per unit for all the products in the firm’s sales mix structure which is equivalent to the contribution per unit in the case of a mono-product firm. With this, the break-even point for a multi-product firm can be calculated as:

\[
\text{Total Fixed Cost} \quad \frac{\text{WAUCM}}{}
\]

In order to calculate the break-even point in sales value for a multi-product firm, there is need to obtain a contribution margin ratio that represents a single CMR for all the products in the firm’s sales mix structure.

The traditional approach of dividing the total contribution by the total sales revenue (to arrive at the CMR), amounts to the use of simple average, with its short-coming. The effect is that the CMR so calculated is determined by contribution only. Again, the final quantity selected for the purpose of the break-even point reveals a situation where a product is allotted the highest quantity simply because it has the highest sales proportion and a relatively lower selling price. The effect of this is that the firm will need a larger quantity to break-even and higher sales revenue that is not proportionate to the large quantity.

All that is required is a unit selling price that represents the selling prices of the individual products in the sales mix structure, which will divide the WAUCM to produce a Weighted Average Contribution Margin Ratio (WACMR). This requirement is met by the Weighted Average Unit Selling Price (WAUSP).

The Weighted Average Unit Selling Price (WAUSP), owes its origin to the secret of weights found in the Weighted Average Unit Contribution Margin (WAUCM). The idea here is to match “desirability” with “acceptability.” Price is one of the bundles of satisfaction which the customer buys (Esu, 2005:72). Hence, the effectiveness of price in the market place is determined by market acceptance. While it is the desire of every firm to sell at the highest price possible, the firm must consider the acceptance of such price. Based on this, the WAUSP is calculated by attaching the sales proportion of each product as a weight to its selling price. This is to ensure that the single selling price selected is not average of the prices of the products in the sales mix structure. The WAUSP therefore represents a realistic price for the purpose of decision making, having taken into consideration, the current market trends (demand).

The Weighted Average Unit Selling Price can be calculated using the formular:

\[
\text{WAUSP} = \left( \frac{\text{SP}_1 \times \text{PS}_1}{\text{TSM}} \right) + \left( \frac{\text{SP}_2 \times \text{PS}_2}{\text{TSM}} \right) + \left( \frac{\text{SP}_3 \times \text{PS}_3}{\text{TSM}} \right) + \ldots + \left( \frac{\text{SP}_n \times \text{PS}_n}{\text{TSM}} \right)
\]
The Efficiency of the Scientific Approach in Analysing the Break-Point in a Multi-Product Firm

Where:

$\text{WAUSP} = \text{Weighted Average Unit Selling Price}$

$\text{SP}_1, \text{SP}_2, \ldots, \text{SP}_n = \text{Unit selling price of the individual products in the sales mix structure}$

$\text{TSM} = \text{Total Sales from the Combined Proportion of all the products}$

$\text{PS}_1, \text{PS}_2, \ldots, \text{PS}_n = \text{The sales proportion of the total sales accounted for by each product in the sales mix structure}$

Having obtained a single contribution per unit for all the products (WAUCM) and a single selling price for all the products (WAUSP), a single contribution margin ratio, which is referred to as the Weighted Average Contribution Margin Ratio (WACMR) can be calculated using the formula:

$$\text{WACMR} = \frac{\text{WAUCM}}{\text{WAUSP}}$$

Having established the WAUCM, the WAUSP and the WACMR, the following computations and formulations become applicable

$\text{BEP in units} = \frac{\text{Total Fixed Costs}}{\text{WAUCM}}$

$\text{B.E.P (in sales value)} = \frac{\text{Total Fixed Cost}}{\text{WACMR}}$

Other computations such as BEP for targeted profit, before and after tax, in both units and in sales value are also possible by applying the WAUCM and WACMR for volume and sales value respectively. Where changes occur in selling price or variable cost, a recomputation becomes inevitable.

Method of Application

A typical company manufactures and sells four products, P, Q, R, and S. The budgeted fixed cost for the period is put at ₦400,000. Other information relating to the sales and cost structure are as given below:
The requirement here is to determine the break-even point in units and Naira value.

To obtain the quantity, the sales revenue is divided by the unit selling price. Contribution is obtained by subtracting variable cost from sales revenue and the sales proportion is calculated as:

\[ \frac{PS}{TSM} \]

**Table 1**
Calculation of Sales Mix Proportion

<table>
<thead>
<tr>
<th>Product</th>
<th>Qty</th>
<th>Unit S.P (₦)</th>
<th>VC/Unit (₦)</th>
<th>Contribution/Unit (₦)</th>
<th>% Sales Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>18,000</td>
<td>30</td>
<td>24</td>
<td>6</td>
<td>30%</td>
</tr>
<tr>
<td>Q</td>
<td>31,500</td>
<td>20</td>
<td>8</td>
<td>12</td>
<td>35%</td>
</tr>
<tr>
<td>R</td>
<td>9,000</td>
<td>45</td>
<td>9</td>
<td>36</td>
<td>22.5%</td>
</tr>
<tr>
<td>S</td>
<td>22,500</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td>12.5%</td>
</tr>
<tr>
<td>Total</td>
<td>81,000</td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

WAUCM = \((6 \times 0.3) + (12 \times 0.35) + (36 \times 0.225) + (4 \times 0.125)\) = 14.60

WAUSP = \((30 \times 0.3) + (20 \times 0.35) + (45 \times 0.225) + (10 \times 0.125)\) = 27.375

WACMR = \(\frac{WAUCM}{WAUSP} = \frac{14.60}{27.375} = 0.533333\)

B E P in units = \(\frac{Fixed \ Cost}{WAUCM} = \frac{400,000}{14.60} = 27,397\) units

B. E. P in sales value = \(\frac{Fixed \ Cost}{WACMR} = \frac{400,000}{0.533333} = 750,000\)
The Efficiency of the Scientific Approach in Analysing the Break-Point in a Multi-Product Firm

Sales Mix at B. E. P (Units) Valued at Individual Selling Price

\[
P = (0.3 \times 27397) = 8219 \times \text{₦}30 = \text{₦} 246,570
\]

\[
Q = (0.35 \times 27397) = 9589 \times \text{₦}20 = \text{₦} 191,785
\]

\[
R = (0.225 \times 27397) = 6164 \times \text{₦}45 = \text{₦} 277,395
\]

\[
S = (0.125 \times 27397) = 3425 \times \text{₦}10 = \text{₦} 34,250
\]

\[
27397 \text{ units}
\]

The Traditional Approach

\[
\text{CMR} = \frac{\text{Sales} - \text{Contribution}}{\text{Sales}} = \frac{1,800,000 - 900,000}{1,800,000} = 0.5
\]

\[
\text{B. E. P in sales value} = \frac{\text{Fixed Cost}}{\text{CMR}} = \frac{400,000}{0.5} = \text{₦} 800,000
\]

Table 2

Computation of B. E. P in Units (Traditional Approach)

<table>
<thead>
<tr>
<th>Product</th>
<th>Sales Proportion</th>
<th>÷ by S.P</th>
<th>B. E. P (units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>(800,000 x 0.3)</td>
<td>₦240,000</td>
<td>8,000 units</td>
</tr>
<tr>
<td>Q</td>
<td>(800,000 x 0.35)</td>
<td>₦280,000</td>
<td>14,000 units</td>
</tr>
<tr>
<td>R</td>
<td>(800,000 x 0.225)</td>
<td>₦186,000</td>
<td>4,000 units</td>
</tr>
<tr>
<td>S</td>
<td>(800,000 x 0.125)</td>
<td>₦100,000</td>
<td>1,000 units</td>
</tr>
<tr>
<td></td>
<td>₦ 800,000</td>
<td></td>
<td>36,000 units</td>
</tr>
</tbody>
</table>

Table 3

Computation of B. E. P in Units from B. E. P (Sales Value) Under the Scientific Approach

<table>
<thead>
<tr>
<th>Product</th>
<th>Sales Proportion</th>
<th>÷ by S.P</th>
<th>B. E. P (units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>(750,000 x 0.3)</td>
<td>₦225,000</td>
<td>8219</td>
</tr>
<tr>
<td>Q</td>
<td>(750,000 x 0.35)</td>
<td>₦262,500</td>
<td>9589</td>
</tr>
<tr>
<td>R</td>
<td>(750,000 x 0.225)</td>
<td>₦168,750</td>
<td>6164</td>
</tr>
<tr>
<td>S</td>
<td>(750,000 x 0.125)</td>
<td>₦93,750</td>
<td>3425</td>
</tr>
<tr>
<td></td>
<td>₦750,000</td>
<td></td>
<td>27,397</td>
</tr>
</tbody>
</table>
Contribution represents the difference between selling price and marginal cost or the summation of fixed cost and net profit (Adeniji 2007:74). In other words, it is that part of the sales revenue, reserved to pay for the fixed costs. At the break-even point, there is neither a profit nor a loss; therefore, the contribution is just enough to pay for fixed costs.

Result

To appropriately understand the outcome of the study, a contribution – sales mix analysis is necessary for the purpose of establishing the method that gives a better sales mix structure, with respect to contribution at break-even.

Table 4
The Scientific Approach

<table>
<thead>
<tr>
<th>Cont. (Unit)</th>
<th>B.E.P (Units)</th>
<th>Total Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>6</td>
<td>8219</td>
</tr>
<tr>
<td>Q</td>
<td>12</td>
<td>9589</td>
</tr>
<tr>
<td>R</td>
<td>36</td>
<td>6164</td>
</tr>
<tr>
<td>S</td>
<td>4</td>
<td>3425</td>
</tr>
<tr>
<td></td>
<td></td>
<td>27,397</td>
</tr>
</tbody>
</table>

The Traditional Approach

<table>
<thead>
<tr>
<th>Cont. (Unit)</th>
<th>B.E.P (Units)</th>
<th>Total Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>6</td>
<td>8000</td>
</tr>
<tr>
<td>Q</td>
<td>12</td>
<td>14,000</td>
</tr>
<tr>
<td>R</td>
<td>36</td>
<td>4,000</td>
</tr>
<tr>
<td>S</td>
<td>4</td>
<td>10,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>36,000</td>
</tr>
</tbody>
</table>

From the above analysis, it takes 36,000 units to break-even under the traditional approach with a sales revenue of \(\text{₦}800,000\). In the scientific approach, it takes 27,397 units and a sales revenue of \(\text{₦}750,000\) to break-even. The traditional approach requires 8603 units more (36,000 – 27,397) and extra sales revenue of \(\text{₦}50,000\) (\(\text{₦}800,000\) – \(\text{₦}750,000\)) to break-even, as compared to the scientific approach. This inefficiency is caused by the simple average used in computing the CMR and the way the total sales for each product were divided by selling price to arrive at the B. E. P in units. Consequently, product ‘Q’ was allotted the highest, because it has the highest sales proportion and a low selling price. Though product ‘S’ had the lowest sales proportion, and the lowest contribution, it was allotted the second highest units. These inefficiencies were addressed in the scientific approach, where, though product ‘Q’ still had the highest, the difference between its share (in units) and that of ‘P’ and ‘R’ was not as much as in the case of the traditional approach. What the traditional approach achieved with \(\text{₦}800,000\) from 36,000 units, the scientific approach achieved the same with 27,397 units and \(\text{₦}750,000\) sales. This success is attributed to the optimal sales mix structure given by the scientific method.

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Conclusion
The need for a cost-effective and pragmatic approach to multi-product break-even analysis is met by the scientific method. The WAUCM represents a single contribution per unit for all the products in the sales mix structure. The WAUSP and the WACMR represent single selling price and CMR for all the products, respectively. When the WAUCM is applied as a divisor to the total fixed cost, the quotient is B. E. P in units. When the same operation takes place between the total fixed cost and the WACMR, the result is B. E. P in sales value. WACMR itself is the result obtained when WAUCM is divided by WAUSP. Once the B. E. P in sales value is obtained it can be used in obtaining B. E.P in units. This process is simple: apportion the BEP in sales value amongst individual products using the sales proportion, divide the result by the WAUSP to arrive at the B. E. P in unit for each product, which sums-up to the B. E. P in units required.

Recommendations
1. Break-even analysis is a veritable tool in setting targets and determining expected profits. The development of an approach which is scientific, reliable and objective is a milestone in overcoming the hitherto, unreliable traditional approach.

2. The WAUCM, WAUSP and WACMR are tested and guarantied models which multi-product companies can conveniently employ in analyzing break-even units and break-even sales volume.

3. The break-even units and sales volume are benchmarks upon which the company can reliably set targets and determine the level of expected profits.

4. Accountants and analysts will find these three models useful and comfortable companions in solving Cost-Volume-Profit problems.

Reference


Abstract
The paper gives a definition of the educated woman and states that an educated woman is expected to bring up her child to meet the challenges of the present day. The acquisition of western education has made women get the technical and managerial skills to significant posts often reserved for men. Education has elevated Nigerian women from being passive members of the society to active partners in decision making both at home and in the society. It also presents the educated woman as a mother and a career woman and emphasizes the implications for African culture. The paper recommends amongst others that more women should be encouraged to go to school so that our children will be properly taken care of, more so that sanctions for parents who fail to send their children to school should be implemented. The paper concludes that Education is the bedrock for empowerment, and it is the only panacea to women empowerment and gender equality not only in Nigeria, but in all parts of the world.

Introduction
Education is the bedrock for empowerment and it is the only panacea to women empowerment and gender equality not only in Nigeria, but in all parts of the world. There is need for parents to provide quality education for the girl-child. The significance of good education to the Nigerian woman cannot be over emphasized, considering the fact that without education, it would be difficult to become genuinely economically and politically empowered and to be relevant in the society."Education has equipped women to become better traders and farmers. This is in addition to the fact that an educated woman is likely to be a better house wife and home manager, and be able to pay more attention to children's health, education and personal hygiene.

Many Nigerian women have acquired formal education and are found in virtually every part of Nigeria today. Most of these qualified women are employed and are working in various establishments contributing their quota at the local, state, national and international level. Many others are self employed and also playing appreciable roles in national development. In the educational sector, women account for a good percentage of the teaching force especially at the nursery, primary and secondary school levels.

An Educated Woman.
According to Egbuna (2007) an educated woman is “a cultured woman and knows how to behave in a proper manner – she is gentle, polite and respectful”. From the African perspective, an educated woman is a woman who has acquired formal or western education at least up to post secondary level. She...
is a woman that knows and asserts her rights. She plays the role of a mother, a wife and also a career woman. Education has made some women prominent in the affairs of the nation; a few of such women are:

- Prof Grace Alele-Williams, Former Vice-Chancellor and First Female Professor of Mathematics in Nigeria. She made her mark as a first class academician and proved herself as a skilled administrator.
- Mrs Laraba Gambo Abdullahi (Vice Chancellor of University of Abuja).
- Professor Jadesola Akande was the Former Vice Chancellor, Lagos State University.
- Professor Obioma Nwaorgu is a Professor of Public Health Parasitology.
- Professor Dora Akinyili was the Former Director General of National Agency for Food, Drug Administration and Control (NAFDAC). She is acknowledged worldwide for her efforts to rid Nigeria of fake, adulterated and expired drugs. She is presently the Minister of Information.
- Professor Ndi-Okeke Onyuke, the former Director General, Nigeria Stock Exchange. She turned the Nigerian stock Exchange into international reckoning.
- Dr (Mrs.) Ngozi Okonjo-Iweala, the former Minister of Finance, now Chief Executive of World Bank.
- Mrs. Obiageli Ezekwesili was the former minister of Education, also serving in World Bank presently.

Some of these women like Prof (Mrs.) Okonjo-Iweala will not be forgotten by many Nigerians, because it was during her tenure as Minister of Finance, according to Amamchukwu (2006: 58) that 18 billion dollars debt relief was granted Nigeria. During the first republic, there were women like late (chief) Mrs Margaret Ekpo, Lady Abayomi Oyinkan, Mrs Fumilayo Ransome-Kuti among others. There are in the present political dispensation some women serving as ministers, legislators, deputy governors among sensitive and high ranking positions.

The Educated Woman as a Mother

As a mother, an educated woman is expected to bring up her children to meet the challenges of the present day world. Many cases of juvenile delinquency originate from homes where parents are not living up to their expectations. Biakolo (1993) contended that “educated mothers are better wives because they can prepare their children for healthy participation in the socio-economic order. A school child spends about six hours at school and about eighteen hours at home. The mother’s influence on the child is therefore very great during the formative years and a mother with a good education can help a
The Educated Women in Nigeria: An Evaluation

growing child tremendously. There is this wise saying that “if you educate a man, you educate an individual, but if you educate a woman, you educate a family and the nation” (Uchendu, 1995). Education has made mothers to be in a better position to look after their children when they are sick, to seek proper medical attention and follow medical advice in the treatment of their children. The education of women has ensured the survival of many babies/children who would have died in the past due to lack of proper care and immunization. The rate of infant mortality has therefore decreased, children thrive and learn quickly; thus mothers and children are happy and healthy. Educated mothers now appreciate and understand the best methods of feeding their children; They are more likely to provide healthy diet, As a wife, she is expected to look after her husband – a duty she no longer wishes to share with others as in the days of expanded family/communal living. She is now capable of carrying out intellectual conversations on contemporary issues. She can discuss more freely on issues that are of interest to the husband and their children. In a study conducted by Olusanya, (1997) wives were asked whether they ever discussed the number of children they desired with their husbands. 81.9% of those who had post-secondary education and 59.5% of those who had only primary education responded in the affirmative. This confirms the importance of education to women and the awareness it has created.

As a wife, she is therefore expected to know about balanced diets, cook palatable dishes for the family and most importantly know when and how to respond to her husband’s needs. She is also expected to cope with intricate modern household appliances, keep the home clean and help financially in housekeeping.

As a Career Woman

Women are no more strictly tied to the roles of mothers and wife, rather they had become co-bread winners with their husbands by sharing financial responsibilities (Zudanneck, 1987). Women have also become professionals in many fields. It is now possible to see a good number of women occupying positions that require high level of skills in industries, civil service and in the business world. This has been possible because of the significant improvement in their level of education and the professional skills they have acquired. They are now taking over certain areas of the economy like teaching in the primary and secondary schools. It is not an overstatement to say that there is no facet of life that women are not playing active parts. Consequently, educated women now are teachers, doctors, lawyers, engineers, architects etc and educated women compete vigorously with men in the labour market. Many possess intimidating credentials and laurels which some of their male counterparts do not have. Education has brought economic freedom to women. This according to Uchendu (1995) “has made people to observe that education has broken the bound that was holding women back and has improved the economic role of Nigerian women
significantly”. As the economy changes, the women are charged to face the new economic realities. Eboh (2004) in observing the new roles and functions played by both men and women in the society stated that this movement has led to the concept of women’s liberation phenomenon in the changing world. With dismay to Eboh, this changing situation has adversely affected the societal norms, tradition and values of the people. Women’s choice of career is sometimes determined by the women themselves without any formal discussion with their husbands.

**Implication for African Culture**

**Socialization**

The freedom education has given to women has some social implications in some African norms and culture. Prior to this time child rearing and socialization of the young ones was the main duty of the mother and other members of the extended family. Today due to the influence of western education and other closely related phenomenon like urban-rural migration, urbanization, industrialization and modern mass communication, the extended family has collapsed.

**Divorce**

Divorce used to be very rare, whenever marital disagreement occurs, the elders quickly intervene as marriage counselors and amicable settlements are consequently effected. Divorce was regarded as a challenge to the reputation, prestige and integrity of the families of both partners; hence all efforts were made to prevent its occurrence. Education has enlightened women so much that they do not want an infringement of their rights as wives. Women now resist subjugation and marginalization by their male counterparts and would ask for a divorce if it gets to an unbearable point. Therefore, marriages are bedeviled by high divorce rate and its negative consequences. Many professional women would prefer to remain single and have children out of wedlock.

**Selection of Marriage Partner**

Marriage in the African culture was a joint affair between the families of both the man and the woman, the relationship is meant to cement the couple’s families. Generally, marriage was practically devoid of courtship. Romance was expected to develop after the marriage. During the period between betrothal and marriage, the boy and the girl were not expected to have any sexual relationship as the girl was expected to be a virgin until her wedding night. Today, some relationships between the young man and woman have little or no parental interference. This has weakened the traditional marital conventions. The driving force in marriage between young couples is romance and social standing without recourse to family history or other vital criteria, which were emphasized in the olden days.
Age of Marriage

With the influence of western education, there is change in the age at which young men and women marry. This is due to long periods of time devoted to education and training. This has accidentally reduced some of the health hazards associated with early marriage, especially Vestico Virginal Fistula (VVF). However delayed marriage and subsequent late child births have some adverse effects like giving birth to abnormal children and the mothers may have to go through a caesarian section and other complications due to prolonged labour. Home Doctor (2004) stated that “children born normally and at the right age are more brilliant than those of old age”.

Chastity

Aina and Odebiyi (1997) stated that in the traditional African culture, any woman found not to be a virgin on her wedding night had exposed her family to ridicule and disgrace. A broken calabash is supposed to be sent to the parents of the bride a day after the wedding by the bridegroom family to signify that their new wife was married a virgin. The blood stained bed sheet would be publicly displayed and the parents of the bride complimented.

Many partners today insist that their brides get pregnant before they contract any marriage in order to prove that they are fertile and able to bear children.

Size of Family

Couples are usually expected to commence having children soon after marriage. Family planning was usually not encouraged because children are regarded as social and economic assets. Education has changed this concept. Today educated women decide with their husbands on the size of their families, once they get to the number of children agreed, the woman goes for family planning. This keeps the woman healthy to look after her children and reduce maternal mortality rate. An educated woman would definitely have less number of children than the uneducated one as the knowledge of birth control varies with the educational level of the women.

Widowhood

In many African cultures including Nigeria, it is observed that when a man dies, his dependents (wife and children) are neglected. The beneficiaries of his property are usually his brothers and sisters with his widow having no access. His eldest son from the deceased’s older wife or one of his relatives remarries his widow. This widow would as the tradition stipulates goes through much humiliation such as shaving her hair and making her to drink the water used in washing her husband’s dead body (mostly to prove her innocence of his death). She is also made to undergo an extended period of confinement in the house and wearing black clothes for a long period of time after her husband’s death.
When a woman dies, her widower does not go through this. A good number of women pressure groups and some non-governmental agencies and organizations are fighting to see that this and other related harmful cultural practices degrading women stop. Those at the vanguard of pushing for a change in these barbaric widowhood practices have been able to do so, due to the exposure of western education. A National Policy on Women was approved by the former President of the Federal Republic of Nigeria, Chief Olusegun Obasanjo as the thrust of government policy on women issues. Some of the goals of the policy according to Amiesamaka (2007) are “the removal of all barriers against the attainment of social justice and equity in society and ensuring the elimination of all forms of discrimination against women.”

Conclusion
It should be realized that in the past, parents thought that as far as their daughters were concerned, everything must end in the kitchen. As time went on, parents became aware of the necessity and importance of educating their daughters and of the advantages, which accrue from education. The acquisition of western education has empowered woman not only to challenge some traditional practices which are harmful to women but it has also emboldened them to press for the outright elimination of such practices. A woman today is to be seen and heard. Gone are those days when women were regarded as chattels, properties of their husbands, only good for the kitchen. Despite the above, a woman will always be a woman. The highest paid female professor still goes back to the kitchen to cook for her husband which is where her primary duty lies. As a chief executive officer, she still consults with her male counterparts before taking certain decisions. All these go to show that she is a helpmate like the Holy Bible rightly said.

Recommendations
It is pertinent that women are educated. It will not only emancipate them, it will empower them to take their right of place in the society. It is no gainsaying the goods educating women will have in our family and society at large. The following recommendations amongst others may be useful

1. To prevent health hazards caused by early marriage, 20 years should be the minimum age for marriage considering the number of years to be spent while in school.
2. More women should be encouraged to go to school so that our children will be properly taken care of, and the best education given to them.
3. Under the universal Basic Education (UBE) scheme, there are sanctions for parents who fail to send their children of school age to school (especially girls). Let there be a monitoring team to see that this is compiled with.
4. The percentage of women in both federal and state government’s executive councils, including the legislation should be increased.
5. Mate selection should be free of parental interference to an extent since it is the partners that know the qualities they want in a man or woman.
6. There should be more enlightenment on family planning programmes. This will help mothers to be healthy.

References


HEALTH COUNSELLING: A PANACEA TO RELIEVING DRUG ABUSERS

E.J. Ibeagha, Ph.D and N.E. Ibeagha

Abstract

Drug abuse which is the use of illicit drugs or the abuse of prescription or over-counter drugs for purposes other than those for which they are intended has rendered many youths useless and even led to the death of many. This paper therefore identified health counseling as a panacea to relieving drug abuses.

Introduction

Health counseling is an emerging area of counseling that is gaining attention. Health counseling is one of the health guidance services which is the relationship between a client and counselor in which the central theme is the issue of client’s health concerns or challenges, discussion of the health issues bordering a client and assisting the client to draw up plans and take actions to overcome, or cope with a health problem, (Ugwuegbulam, 2005).

Ibeagha (2007) stated that health counseling exists to help the needy in society. It is a method of interpreting to the client and parents, the findings or results of appraisal and encouraging or assisting them to take appropriate action in order to realize their potentials. Health counseling is also seen as a means of assuring a child of a choice not force and not actually advice. It is also a part of treatment given to the sick or to the troubled person for promoting his life and for preventive purposes.

According to Ugwuegbulam (2005) the objective of health counseling could be said to include the following.

- To enhance a positive regard for self acceptance of self and others.
- To motivate clients to keep self in an optional state mind.
- Enhance clients understanding of their health.
- Help clients in planning their health programmes in a way that it will be consistent with what they or want to do after school.
- Help clients implement good health practices.
- To promote conference on health.
- To implement health referral for clients to appropriate health agencies.

Need and Purpose of Health Counseling

Ibeagha (2007) highlighted the following as the need and purpose for health counseling.

- Help to give the clients information about their health status as revealed by health appraisal.
- It is a means of securing diagnostic advice.
It also helps to produce adapted programme for the exceptional client based on their differences in terms of their problems.

It is a process of helping the client develops full appreciation of the valuable asset he has in good health.

It also help them to offset the pressure of consumerism, helps us become better consumers of health.

To help clients responsibility for their own health in keeping with the state of their maturity.

Students and teachers, like most people do take drugs. They take drugs for different reasons; some use drugs as prescribed, other abuse its use. In Nigeria drug use has been part of our socio-health inheritance. In Onuzolike (2002) defined drug as a chemical substance capable of altering the physical and psychological functions of the body. Drug is any chemical that has an effect upon the body and mind of an individual. A drug when modifies one or more functions of the taker (Onyemerekeya, 2005). Adolescents take drug and at times abuse it.


According to Onuzulike (2002) drug are abused when taken excessively, improperly or persistently without doctor’s prescription. Drugs are often recognized as hard or soft, legal or illegal, uppers or downers or addictive and non-addictive. Drug abuse is seen as rising when the drug (any substance) is being used by some person and this use is judged to be wrong use (illegal or immoral) and is harmful to the user or society or both, (Nwamu, 2001).

However drugs constantly abused can be categorized based upon the effect they produce. These include the following as recorded by counseling directory(2009).

i. Stimulants- they are drugs that increase the acuity of the central nervous system and increase brain activity. They subdue tiredness.

ii. Depressant-they are drugs that reduce the activity of the central nervous system and slow down brain activity thereby including lethargy. Example includes solvent, alcohol, barbiturates, heroin and tranquilizers

iii. Narcotics – they are depressant with major effect on the nervous system and respiratory system. They are used extensively as pain relieving drugs in the past. Example includes opium, morphine, and codeine. They produce the feeling of drowsiness, euphoria and contentment

iv. Hallucinogens- they alter perception of reality changing the way users experience the world through their senses. Examples are LSD, cannabis, ketamine, peyote, mescaline etc. often users will see and hear things that is not real. They can also trigger psychotic reaction, including paranoia
Causes of Drug Abuse

According to counseling directory (2009) many reasons are attributed to why individuals abuse drugs and these will vary from person to person. However, some common reasons are likely to be:

- Escapism
- The belief that drugs can solve problems
- Peer pressure
- Need to experiment
- Enjoyment of the effect
- Easy access to socially acceptable drugs such as alcohol and tobacco.

Irambiya (2009) opined that the cause of drug abuse could be psychological or family system and Communal psychological factors include frustration, Imitation, personality tracts, desires to improve social Relation, family system and community factors such as existence of marital problems, stress in the family etc peer influence and other factors such as academic difficulties, enhancing performance in sport, illiteracy.

Physical Warning Sign of Drug Abuse

Leshner (2003) outlines the following signs such as

- Bloodshot eyes or pupils that is large or small than usual
- Changes in appetite or sleep patterns
- Sudden weight loss or weight gain
- Unusual smells of breath, body or clothing
- Deterioration of physical appearance and personal grooming habit
- Tremors, slurred speech or impaired co-ordination

Behavioral Warning Sign

- Drop in attendance and performance at work or school
- Engaging in secretive or suspicious behaviors
- Unexplained need for money or financial problems
- Sudden change in friends, favorite hangouts and hobbies
- Frequently getting into trouble (fight, accident, illegal activities). {Deykin, Levy and well, 2007).

Psychological Warning Signs

Smith and Saisan (2010) highlighted the following signs thus:

- Unexplained change in personality or attitude
- Sudden mood swings, irritability or angry outburst
- Lack of motivation, appears lethargic
- Appears fearful, anxious or paranoid
- Periods of unusual hyperactivity, agitation or giddiness.
Steps Adopted by Health Counselors in Combating Drug Abuse

Health counseling can be immeasurably beneficial in helping a client understand why they drink or use drugs and alcohol, how alcohol and drugs are destroying their lives and why they are alcoholic or addict. It is often the best ways to start helping a client to address the reasons that they take drugs or alcohol (Ugwuegbulam 2002).

Counseling against drug abuse in Nigeria is measure and means to combat drug trafficking and drug abuse in Nigeria. These involve the use of different methods against illicit traffick in narcotic drugs and psychotropic substances. Khantzian, Halliday and McAulife (2000) suggested that the following procedure should be adopted during counseling of drug abusers:

- Acknowledgement that there is problem
- Foster environment where the client gains self-esteem through gradual self – efficacy and internal locus of control in choosing to use the social and therapeutic support systems provide through the treatment centre.
- The need for referral in advanced cases.
- Structured and targetted media intervention.
- Organization of seminars and workshops whereby issues affecting client well being and impaired proper function is known and providing adequate information.

According to US National institute on Drug Abuse (2000) the following steps are Adopted in Counseling drug Abusers:

- Counselors ought to counsel individuals with related problems of substance.
- Clients are to be counseled and empowered with substance abuse problems and treat the substance abuse problem.
- Establish the same open, collaborative therapeutic relationship in counseling individuals with substance abuse problems.
- Focus counseling relationship on addressing the client’s present problems directly and identifying client need for change.
- The counselor must be able to articulate and implement counseling intervention strategies perceived as appropriate by the client and the counselor.
- They must know community resources and procedures for referral to be able to insure access to effective and appropriate support services for clients.

Counseling Procedures

Nwamuo [2005] asserted that giving assistance to drug abusers is not easy thing. It is not a thing of force but cooperation and collaboration. In order to do this, the counselor has to get the willing consent or approval of the drug abusers that he needs assistance to stop or reduce drug abusing behaviour. One of
the way to get the clients interest and co-operation to reduce abuse on client-
physically, socially, emotionally, educationally etc and society.

A. **Using Aversive Therapies** – this is progressive relaxation and
sensitization habit. The therapies include electric shock and verbal
aversions, the electric shock is administered by the client to the forearm,
taking effects and advised to think of their effects whenever they want to
take drugs. When this is done: the potency of the techniques is likely to
field in a desired result.

B. **Reassuring Environment Contingencies** – this strategy is derived
from the stable of the operant conditioning technique and focuses on the
consequences of behaviour, it is assumed that drug abusers receive more
reinforcement, be it positive or negative, when taking drugs than when
they are off the drug. The objective of rearranging environment
inferences is to provide maximum intoxicated and punishment or
withdrawal of reinforcement of taking drugs in school situation, the
taken economy system and behavioral contingency contracting are
adapted to be used when working on drug addicts. A counselor should
employ them following the processes.

C. **Modify Abusive and Dependent Behaviors** – one of the issues facing
drug addicts is whether they rise above the temptation of taking drugs
when faced with such a challenge. In reaction to this, the behaviorists
have advanced some techniques that could be used to modify drug
addiction in abusers. The technique includes self control methods and
skill training. Ekennia (1999) had demonstrated the efficiency of self
control methods in cigarette smoking cessation. Self control method
would be discussed on:

- Removing those things he/she uses when he/she wants to take
  those addicted drugs such as removing ash trays, beer mugs etc.
- Socializing with non – drug addicts.
- Avoiding situation and places linked to substance taking and
  abuse.
- Seeking assistance from a counselor when attempting to control
  his or her addictive behaviour.
- Not going to where the substance that is abused is sold.
- Training in assertiveness so that the drug abuser can develop a
  strong will to say “NO” to taking drugs and actually keeping to
  it (Ugwuegbulam, 2005).

D. **Personalized Processes** – Ibeagha (2007) opined that aims to make the
client take control of his action, situation he does not have to blame
somebody else but himself. It is a process of letting the person feels that he is a whole being capable of solving his problem.

E. **Assumption of Responsibility** – the counselor helps the client to take responsibility for certain things such as drug addict given certain drugs to keep.

F. **Role playing** – it helps to enhance self awareness of the individual. It makes for self discovery and makes one relieve anxiety and develops a feeling of self sufficient and self confidence it can be spontaneous or structured.

G. **Frustration Technique** – the counselor makes client to come in contact with this problem, relaxing the mind to avoid any emotional problem and can live with it by self assessment, self determination evaluation, and careful analysis of your life.

**Conclusion**

Drug abuse has dealt devastating blow on people of all age brackets worldwide. It has also infiltrated all the strata of the society in both the developed and developing countries of the world. However, meticulously analyzed survey constitutes a menace and threat to the entire society. Health counseling leaves the client / drug abuser with the choices of having good health or death as it exposes them to the effects of drug abuse on individual health. Health counseling saves life and whoever you are, however hopeless you believe yourself to be, the right drug rehabilitation program really can help you get sober. The catch is that the client must be willing to seek help. The health counselor adopts all necessary procedures in relieving the drug abuser.

**References**


**Health Counselling: A Panacea to Relieving Drug Abusers**


PURPOSES OF SALES QUOTAS: THE SALES MANAGER’S PERSPECTIVE

Dr. Joseph I. Uduji

Abstract
This study was an attempt to examine the sales manager’s purposes of sales quotas for their sales persons. 115 sales executives of 23 firms in Nigeria were offered the questionnaires to participate in the study. Address labels were provided with the instructions to the respondents to mail the completed surveys directly to the researcher. The findings of the survey reveal that a sales quota is a sales performance goal. It serves such purposes as: indicating strong and weak spots in a company’s selling structure; furnishing a goal and incentive for the sales force; improving the effectiveness of compensation plans; controlling selling expenses; and evaluating sales contest result. Management should recognize the characteristics of a goal quota plan. They should also make sure that their salespeople understand the bases on which quotas are set and the process which is used to set them.

Introduction
According to Sandis (2000: 35 – 45), a sales quota is a performance goal assigned to a marketing unit for a specific period of time. The marketing unit may be a salesperson, a branch office, a district or region, or a dealer or distributor. For example, each salesperson might be assigned a sales volume goal or a gross-margin goal for the coming three-month period. Morgan and Inks (2001: 463 – 472) noted that this quota goal may be stated in dollars, product units, or selling activities. The specified time period usually is a month, a quarter, six months, or a year; but it may be for as short a period as a week. A marketing units quota may also be established for individual products and/or types of customers. When salespeople achieve their quotas, they often receive some sort of reward for their performance.

The most frequently used types of sales quotas are those on: sales volume; gross margin or net profit; activities; expenses; and some combination of the four (Galea, 2004: 29 – 30). The types of quota that management selects depend on several factors, including the nature of the product and the market. Undoubtedly, the most widely used type of sales quota is one based on sales volume. A volume quota may be established for a geographical area, a product line, a customer, a time period, or any combination of these bases. Ordinarily, it is more effective to set a monthly or quarterly quota than an annual one. Some high-performance sales organization even set daily sales quota (Oliva 2001: 44 - 46).

Even when a company sells a large number of products, it may be feasible to group them into a few broad lines and then set unit quotas for each
line (Jap, 2001: 95 – 108). Management uses volume goals because they are simple to understand and easy to calculate. Many sales managers still regard sales volume as the only real measure of a sales person’s worth to the company. However, sales volume alone does not tell the full story of a salesperson’s productivity and effectiveness. It does not indicate the profit generated by the person’s efforts nor does it measures the effort to which the sales person has done a fully balanced sales job (Shaw, 2001: 28 – 30). In fact, volume quotas discourage balanced activities by the sales force because they stress volume to the detriment of non-selling activities.

Many companies set quotas based on gross margin or net profit. These goals may be established on many of the same bases as a volume quota (Renartz and Kumar, 2002: 86-94). One significant draw back to gross margin or net profit quotas is the possibility that friction may arise between management and the salespersons. The sales people may not understand how their quotas were calculated, and the salespersons may not be able to measure their progress during the quota period. Another limitation—especially of a net profit quota—is that the salesperson has no control over some of the factors on which the quota is based. For example, unexpectedly high production costs may leave the company with little or no profit on a certain product (Zoltners and Lorimer, 2000: 139 -150). A compromise approach is to base the quota on a salesperson’s contribution to profit. Contribution to profit, or contribution margin, is the amount left after deducting a salesperson’s direct expenses from his or her gross margin. The remainder is the amount the salespersons is contributing to cover the overhead costs (Goran, 2002: 574 -583).

Some companies attempt to encourage a profit consciousness by establishing a quota based on the salesperson’s travel and other expenses. Often the expense quota is related to sales volume or to the compensation plan. A salesperson may be given an expense quota equal to 2 percent of sales. That is, direct expenses, such as travel, entertainment, food, and lodging, must not exceed 2 percent of net sales volume (Goutain, 2000: 161 – 172). Expense quotes probably encourage a salesperson to be more aware of costs and profit than volume goals. Nevertheless, it seems that an expense quota is a negative approach to the problem. A person’s attention may be devoted more to cutting expresses than to boosting the sales of profitable products (Frankwick, Porter and Crosby, 2001: 135 – 146).

One way to decrease the emphasis on sales volume is to establish a quota based on activities. Management may select from such tasks as: daily calls; new customers called on; orders from new accounts; product demonstrations made; and displays built. (Dorsch, Calson, Raymond and Ranson, 2001: 157 – 166). Activity quota properly established and controlled can do much to stimulate a fully balanced sales job. This type of quota is particularly valuable for use with missionary salespeople. Probably, the principal difficulties in administering an activity quota are, first, to determine whether the activity actually was performed
and, second, to find out how effectively it was done (Desphande and Farley, 2000: 353 – 362). Companies that are not satisfied with any single type of quota may combine two or more types. A combination quota seeks to use the strong points of several types of quotas, but frequently such a plan is limited by its complexity (Carlson and Pearo, 2004: 48 -59). In many cases, combination quota structures are so complicated that they are not easily understood by the salespeople: then the quota becomes a source of dissatisfaction rather than an incentive (Colgate and Danaher, 2000: 375 -387).

A sales quota – especially a sales volume quota is related to both the sales potential and sales forecast. The sales potential influences the sales forecast, and the sales forecast helps to shape the quota (Cherry and Fraedrich, 2000: 173 – 188). However, a sales quota is not the same as either of these planning tools. Management usually sets sales quotas so that their total equals the sales budget. Thus if all the salespersons reached their quotas, the sales budget would be met. Fundamentally, two general approaches may be used to set volume quotas: Quotas are set in conjunction with territorial sales potentials. Also quotas are set on the basis of considerations other than sales potentials, such as past sales, executive judgment, salesperson determination, or compensation design (Chonko, Dubinsky, Jones and Robert, 2003: 935 -946; Boles, Babin, Brashear, and Brooks, 2001: 1 -13). Sales quotas help in planning and evaluating sales force activities. When setting sales quotas, the sales managers should consider the goals and strategies developed in the marketing planning. If the marketing goal is to increase market share, then a sales volume quota may be appropriate. However, if the goal is to increase a company’s return on investment or net profit as a percentage of sales, then a sales volume quota probably is not appropriate. Instead, some form of quota based on gross margin, or even an expense quota, is more in line with a profit – oriented goal. Thus good sales quota can help effectively implement the strategic plans (Brasheer, Bole, Bellenger and Brooks, 2003: 189-199).

**Research Problem**

A sales quota is a performance goal assigned to a marketing unit for a specific period of time. The marketing unit may be a sales person, a branch office, a district or region (Sandis, 2000: 35 – 45). Some companies place the quota problem in the laps of the salespeople by letting them set their own performance goals. The rational for this move is that the salespeople are closer to their territories than the management and thus can do a better job. Even though that setting their own quotas may allow the salespeople to reflect the several useful purposes that sales quotas serve to the company. Of course, if salespeople make the decisions about their own goals, they will have higher morale and strive more to attain the quota. However, from the practical stand point, this method leaves much to be desired. Salespeople do not have access to the necessary information. Also, salespeople often tend to be optimistic about their abilities and
opportunities in the territories. Therefore, they may set unrealistic quotas that are void of the management purpose for sales quotas.

On the other side, a final essential ingredient in a well-planned and well-operated quota system is its whole hearted acceptance by the sales force. Salespeople often are suspicious of quotas, either because the purpose are not apparent or because there are questions about factors underlying the plan. The purposes of the quota, the bases on which the quotas are set, and the methods used in the process should be explained to the salespeople. When the quota is ready for formal installation, the sales force will probably be more inclined to accept it if they have had a hand in its development and purpose. Management also stands to gain by soliciting ideas firm salespeople, who may introduce considerations that escaped management notice.

Salespeople could be kept informed about the management purposes for sales quotas allocated to them. They could also be kept informed about their process toward meeting the performance goal. Conferences and correspondence with the salespeople often could be necessary. The sales force also may need some incentives to reach the goal. This may come from a bonus for achieving the quota or from some other direct link with the compensation plan. Management could make it clear that quota performance is reflected in periodic merit ratings, salary reviews, or considerations for promotion.

**Research Purpose**

Therefore, the purpose of this study was to examine the sales manager’s perspectives in establishing a purpose for sales quotas. This would alleviate the salespeople’s suspicious of quota, and make the purpose more apparent.

**Research Method**

This study worked with both primary and secondary data. The secondary source used both published and unpublished materials from texts, libraries, companies and other public documents. 115 sales executives of 23 firms in Nigeria were given the questionnaires to participate in the study. Address labels were provided with instructions to the respondents to mail the completed surveys directly to the researcher. The sales executives were also promised a copy of the summary results to entice them to participate. This approach appears to have created much interest and willingness to participate might have been lower otherwise. SPSS for windows was used to analyze the data collected from the survey.

**Findings and Discussion**

Sales quotas are widely used basis for evaluating sales force performance. Salespeople who meet their quotas are judged to be performing adequately in the activity the quota concerns. Thus quotas can have a big impact on a salesperson’s morals. Because of these strategic and behavioural
considerations, it is important that management do the best job possible when setting quotas. The survey table shows that sales quotas serve several uses purpose. For example, when accurate quotas are established for each territory, management can determine that extent of territorial development by whether or not the quota is being reached. If the sales total significantly exceeds the predetermined standards, management should analyse the reasons for this variance. If the Sales in a district fail to meet the quota, this failure tells management that something has gone wrong. Of course, it does not tell why the failure occurred. It may be that competition is stronger than expected, the salespeople have not done a good selling job, or the potential was over estimated.

Survey Table: Purposes of Sales Quotas

<table>
<thead>
<tr>
<th>S/No</th>
<th>Of Sales Quotas</th>
<th>Percentage of sales Managers who Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To indicate strong or weak spots in the selling structure</td>
<td>12%</td>
</tr>
<tr>
<td>2</td>
<td>To Furnish goals and incentives for the sales force</td>
<td>23%</td>
</tr>
<tr>
<td>3</td>
<td>To Control salespeople activities</td>
<td>20%</td>
</tr>
<tr>
<td>4</td>
<td>To evaluate productivity of salespeople</td>
<td>21%</td>
</tr>
<tr>
<td>5</td>
<td>To improve effectiveness of compensation plans</td>
<td>9%</td>
</tr>
<tr>
<td>6</td>
<td>To control selling expense</td>
<td>10%</td>
</tr>
<tr>
<td>7</td>
<td>To evaluate sales contest results.</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field Survey

The survey table also reveals that in business, as in any other walk of life, individuals usually perform better if their activities are guided by standards and goals. It is not enough to say to a salesperson that we expected you to do a good selling job. It is much more meaningful to express this expectation in a specific quota consisting of a given Naira sales volumes or number of new accounts to be acquired during the next month. Without a standard of measurement, salespeople cannot be certain their performance is satisfactory. This survey also disclosed that sales relative to quota are the most widely used performance criterion by which salespeople are judged. The survey table also shows that a corollary to the preceding point is that quotas enable management to direct the activities of the sales force more effectively than would otherwise be possible. Through the use of the appropriate type of quota, executives can encourage a given activity such as selling high-margin items or getting orders from new customers. The sales persons are not likely to know which area of activity should be stressed unless management tells them.
The survey table also indicates that quotas provide a yardstick for measuring the general effectiveness of sales representatives. By comparing a person’s actual results with his or her quota, management can evaluate that person’s performance. Quota performance also provides guidance for field supervisors by indicating areas of activity where the sales force needs help. Decisions on whether to give salespeople promotions or raises are often based largely on their performance in relation to their quotas. It is also found in the survey that a quota structure can play a significant role in a sales compensation system. Quota can furnish incentives to salespeople who are paid straight salary. A sales person knows, too, that a creditable performance in meeting assigned quotas reflects favourable on him or her when it is time for a salary review.

In some cases, sales people receive a bonus if they achieve a certain quota or they may receive a commission on all sales above so preset level (or quota) of sales. Inequities in territorial potential may cause inequities in compensation unless a firm established a quota system. The survey table also discloses that management can often encourage expense control by the use of expense quota alone, without tying them to the compensation plan. Some companies gear payments for the salespeople’s expenses to a quota. Companies may set an expense quota and let the salespeople know their effectiveness in being judged in part by how well they meet it. Finally, the survey table indicates that sales quotas are used frequently in conjunction with sales contests. Salespeople rarely have equal opportunities in a contest unless management makes some adjustment to compensate for variation in territorial potentials and workloads. Using the common denominator of a quota, management can ensure each participant a reasonable equal chances of winning, provided the quota has been set accurately.

Conclusion

The last major element in sales management planning is the establishment of a sales quota. A sales quota is the sales goal assigned to a marketing unit in a specified period. Sales quotas may be expressed in aggregate or broken down by customer and products. Sales quotas are used to motivate salespeople, evaluate their performance, and control their efforts. For a quota plan to produce its potential benefits, the quotas must be attainable with normal effort, easy to understand, and complete.

Recommendations

1. When setting sales quotas, the sales managers should consider the goals and strategies developed in the marketing planning. If the marketing goal is to increase market share, then a sales volume should be appropriate. But if the goals is to increase a company’s return on investment or net profit as a percentage of sales, then a sales volume quotas should be not be used. Instead, some form of quota based on gross margin, or even
Expense quota should be more appropriate with a profit–oriented goal. Thus good sales quotas can help effectively implement the strategic plans.

2. Additionally, sales quotas should be used to guide the salespersons’ activities. Quotas that are too high should cause salesperson to high–pressure and overload the customers, while quotas that are low may not serve to motivate the salesperson.

3. Finally, sales quotas should be used for the basis for evaluating the sales force performance. Salespeople who meet their quotas should be judged to be performing adequately in the activity the quota concerns. Thus, quota can have a big impact on a salesperson’s morals. And because of these strategic and behavioural considerations, it is important therefore, that management should do the best job possible when setting quotas for their salespersons.

References


Abstract

This study set out to investigate the relationship between gender and achievement of SS III students in Physics. Correlation research design was used and stratified proportionate random sampling technique was employed. 494 subject used for the study were randomly selected from 25 secondary schools across the six education zones of Enugu State. Intact classes were used. One intact was selected by simple balloting for schools that have more than one stream studying Physics. Test of Understanding of Physics Concepts (TOUPC) was the instrument in the study while the school certificate physics examination was the achievement test for the SSCE. Results showed from the simple correlation and regression analysis a weak negative relationship between gender and TOUPC and no relationship between gender and SSCE results. Gender did not correlate significantly with students' achievement in SSCE. In conclusion, gender was significantly related to senior secondary school Physics students’ understanding of physics concepts but not a significant predictor of their attainment in SSCE.

Introduction

The knowledge of Physics has been found to be very essential in the understanding of modern technology and the myriads of the scientific developments useful to mankind. However, research findings on understanding of Physics concepts and achievement in Physics deduced from students’ performances (whether interview or written) in solutions to problems in the Physics concepts generally show that the students do not appear to have a set of logically coherent ideas about Physics concepts. The students not only have poor knowledge of Physics concepts but also cannot relate their knowledge to practical situations in applying the principles learned. Nevertheless there are two major aspects to the difficulties that children have with learning Physics- things to be learned (Physics curriculum) and the learners (the group of children to whom the materials is to be taught). Educational psychology puts great emphasis on the anchoring ideas already established in the pupils’ cognitive structure and suggested the ideas of structuring learning materials to be taught. Ausubel’s famous idea to start from what the learner already knows is concerned about the processing skills the learner has available to cope with new materials.

Evidence however abound that many students approach Physics with concern about the difficulty of Physics, doubts about their own
abilities in Physics and uncertainty about its value and relevance to their lives (Orji 2000). According to him, there is the apprehension that Physics involves a lot of symbols and calculations. These feelings pose a significant challenge in their understanding of Physics concept. Thus Orji (2000) also identified learner factor to have considerable influence in understanding Physics. One of such factors is gender which may be the major factor contributing to the deplorable state of Physics education that manifests itself in low enrolment and poor achievement by Physics students.

Interest in gender and physics enrolment and achievement derives mainly from two concerns. Equality between the sexes that focuses on the need to avoid sexual discrimination in education. And for a wider interest and understanding in physics so as to eliminate the shortage of female representations in certain scientific and technical areas. Science and technology may equally change as a result of the wider participation of women. Thus if girls appear to shun choice of physics as observed in Nigeria secondary schools, female representation in scientific and technical areas will ultimately be low. Unless something is done in form of research and implementation of research findings, Nigeria would for a long time to come fit into Rivo’s less developed group in which the percentage of female scientists and engineers in the country can be between 2.5% (as in Madagascar) and 9.3% (as in Togo) Ventura (1992). Again the achievement of Nigeria’s Vision 20:2020 goals will be a mirage. Curriculum planners and implements are faced with the problem of gender gap and enrolment in science education (Ukwungwu, 1999). Hence, the importance of consideration of gender as a factor in a study of this nature.

However, a comprehensive review of the literature on gender differences reveals that there has as yet not been any clear picture concerning this issue. Osisioma (1995), Johnson and Murphy, (1984), Zeltoun (1989). That gender has significant contribution on student’s understanding of physics concepts and achievement has been reported by some researchers, Bomide (1986); Nworgu (1988) and Ezeife (1990), both reported in Osisioma (1995), while some research reports reveal no significant effect due to gender in students’ achievement in Physics, Daramola (1983), Nkpa (1997), Lagoke, Jegede and Oyebanji (1997) and Iloputaife, (2001).

Some empirical studies have been conducted in Nigeria relevant to the present study. Most of these studies were done outside Nigeria. The available ones relevant to the present study were inconsistent because there were no general agreement among the findings. The present study further investigated the influence of gender on Physics
Gender and Achievements in Senior Secondary School Physics

concept attainment in order to shed more light and help resolve the controversy.

Purpose

A meta-analysis of empirical studies in gender-related differences in achievement showed that gender is related to Physics achievement, Ukwungwu (1999). It would appear that gender differences in achievement in Physics is hypothesized to give rise to the problem of gender gap in Physics. Investigations, directed at eliminating gender difference in achievement in Physics would hold immense promise for an improvement of the status of Physics education in Nigeria. In this study we are not concerned with issues of cause and effect but rather on how gender relates to senior secondary school Physics students’ achievement in physics. Specifically, the study attempted to determine the relationship between gender and students’ achievement in TOUPC and SSCE in Physics. The following research question guided the study.

RQ1: What relationship exits between gender and achievement of SS III Physics students in TOUPC and SSCE?

The following hypothesis were tested at 0.05 level of significance.

HO1: There is no significant relationship between gender and achievement of SS III physics students in TOUPC.

HO2: There is no significant relationship between gender and achievement of SS III physics students in SSCE in physics.

Procedure

Correlational research design was employed in this study while stratified proportionate random sampling technique was the sampling design. 494 subject from 25 schools across the six education zones of Enugu State were selected with the help of Table of random numbers using the list of schools in the zones. Intact classes were used while simple balloting was used to select a class for schools that has more than one stream studying Physics. Test Of Understanding of Physics Concepts (TOUPC) designed by the research and school certificate Physics examination were the achievement tests for the study. TOUPC was a 36 multiple choice items with provisions for explanations of the choice of options based on the concepts of motion, force, electric current and electric circuits respectively. A scoring guide utilized a four point scale system of 0 (lowest quality answer) to 3 (highest quality answer. The face and content validation on TOUPC was validated by six experts. After the test, 48 scripts on TOUPC belonging to the subjects were drawn at random and marked differently by two experts. The inter-rater reliability was calculated using Kendall’s coefficient of concordance and
it yielded a value of 0.52. The respective values for each concept were motion = 0.51, force = 0.56. Current = 0.41 and circuit = 0.40. After the SSCE results were released, the researcher visited WAEC office and collected the physics score grades of the subjects. Both correlation and simple regression analysis were employed on the data collected.

Results

One research question was answered and two null hypotheses were tested in the study.

The research question is, what relationship exists between gender and achievement of SS III physics students in TOUPC and SSCE?

Table 1:

<table>
<thead>
<tr>
<th>Validation</th>
<th>R</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender and motion</td>
<td>-0.25</td>
<td>Weak negative relationship</td>
</tr>
<tr>
<td>Gender and force</td>
<td>-0.25</td>
<td>“</td>
</tr>
<tr>
<td>Gender and current</td>
<td>-0.24</td>
<td>“</td>
</tr>
<tr>
<td>Gender and circuit</td>
<td>-0.23</td>
<td>“</td>
</tr>
<tr>
<td>Gender and TOUPC</td>
<td>-0.31</td>
<td>“</td>
</tr>
<tr>
<td>Gender and SSCE</td>
<td>0.02</td>
<td>No relationship</td>
</tr>
</tbody>
</table>

Data in Table 1 above indicates that male and female SS III Physics students have weak negative relationship in their mean scores in TOUPC. The tendency is that where male students had high scores in TOUPC, female students had low scores. This indicates that increase in scores in TOUPC of male students tend to occur with decrease in scores of female students and decrease in scores of male students to occur with increase in scores of female students. This result is similar with each of the concepts examined.

Male and female SS III physics students have no relationship in their attainment in SSCE. There is therefore no consistent tendency for variation in scores in SSCE of male and female students to agree. This indicates that when male students increases in achievement, one cannot say whether the achievement of female students will decrease or increase in SSCE.

To null hypotheses were tested in the study. They are:

$H_{01}$: There is no significant relationship between gender and achievement of SS III physics students in TOUPC.
**Gender and Achievements in Senior Secondary School Physics**

**HO₂:** There is no significant relationship between gender and achievement of SS III physics students in SSCE in physics.

**Table 2: Regression of Students’ Attainment in TOUPC and SSCE on Gender**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Multiple R</th>
<th>$r^2$</th>
<th>Standard error</th>
<th>Tcal</th>
<th>Tcrit</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender and motion</td>
<td>0.25</td>
<td>0.062</td>
<td>0.43</td>
<td>-5.73</td>
<td>1.96</td>
<td>S*</td>
</tr>
<tr>
<td>Gender and force</td>
<td>0.25</td>
<td>0.062</td>
<td>0.51</td>
<td>-5.79</td>
<td>1.96</td>
<td>S*</td>
</tr>
<tr>
<td>Gender and current</td>
<td>0.24</td>
<td>0.058</td>
<td>0.41</td>
<td>-5.36</td>
<td>1.96</td>
<td>S*</td>
</tr>
<tr>
<td>Gender and circuit</td>
<td>0.23</td>
<td>0.053</td>
<td>0.33</td>
<td>-5.21</td>
<td>1.96</td>
<td>S*</td>
</tr>
<tr>
<td>Gender and TOUPC</td>
<td>0.31</td>
<td>0.096</td>
<td>1.32</td>
<td>-7.17</td>
<td>1.96</td>
<td>S*</td>
</tr>
<tr>
<td>Gender and SSCE</td>
<td>0.02</td>
<td>0.00</td>
<td>10.52</td>
<td>0.41</td>
<td>1.96</td>
<td>NS*</td>
</tr>
</tbody>
</table>

NS* = Not significant at P<0.05  
S* = Significant at P<0.05  

Data in Table 2 indicate that the calculated t-value due to the relationship between gender and TOUPC is -7.17 while the t-critical value at 0.05 significant level(s) with 1 and 492 degrees of freedom is 1.96. since the calculated t-value is greater than t- critical, the null hypothesis of no significant relationship is rejected. Therefore, male and female SS III physics students are significantly related in their achievement in TOUPC at the 0.05 probability level. This means that the relationship between gender and TOUPC is not due to chance. The coefficient of determination $r^2 = 0.096$ means that 9.6% is the proportion of the total variation in TOUPC that is explained by gender.

Furthermore, the calculated t-value due to the relationship between gender and attainment in SSCE is 0.41 while the t-critical value at 0.05 significant level(s) with 1 and 492 degrees of freedom is 1.96. since the calculate t-value is less than t-critical, the corresponding null hypothesis of no significant relationship was not rejected. Therefore, male and female SS III physics students were not significantly related in their achievement in SSCE at the 0.05 probability level. This means that any relationship that may be noticed is due to chance or error of research. This is evidenced by the coefficient of determination $r^2 = 0.00$ meaning that 0% is the percentage of the variance due to the relationship.

**Discussion**

This study sought to determine the relationship between gender and students’ attainment in TOUPS and SSCE. The result of regression analysis indicate that gender had weak negative relationship with understanding of Physics concepts which was found to be significant at
0.05 probability level. The result confirms the findings of Zeltoun (1989), Bomide (1986) and Ukwungwu (1999) that gender had a role in predicting the achievement of Physics concepts. Some research findings which include Ivowi (1983), Inomiesa (1986), Nkpa (1997); Lagoke, Jegede and Oyebanji (1997), and Iloputaife (2001) showed no significant relationship due to gender. Ukwungwu (1999) in a meta-analysis of empirical studies of gender-related differences in achievement in science reported that while Ehindaro (1986), Ezeife (1990) and Momoh-Olle (1997) found that boys achieved better than girls in Physics, Atadoga (1997), Olarewaju (1997) and Ugwuanyi (1998) show that girls achieved better than boys in Physics. In the light of the anomalies, Ukwungwu resorted to integrating research results on gender differences in achievement in Physics. The gender difference effect for achievement in Physics was in favour of males. The magnitude of gender difference effect was significant.

However it can be reasoned from the weak negative relationship found in this study that boys and girls responded differently to the items in the Test Of Understanding of Physics Concepts (TOUPC). The items could be suspected to be stereotyped in gender for they might have been gender sensitive by appealing differently to different sexes. The weak negative relationship could also mean that gender influences is not just a simple phenomena always in favour of any sex but may have a complicated interaction with other factors such as understanding. This may need further investigation.

On the relationship between gender and students attainment in SSCE, the regression showed no correlation between gender and achievement of students in SSCE. Accordingly, gender of the students cannot be used to distinguish clearly the students who scored high in SSCE and those who scored low in SSCE. This finding is in agreement with Daramola (1983), Nkpa (1997), Iloputaife (2001), Harding (1992) and Okoli (1995). For instance Harding revealed that given the appropriate conditions, girls could achieve in science as well as if not better than boys while Okoli revealed that no clear evidence from research findings to show that males are more endowed intellectually than females. Stumpf and Stanley cited in Linn (1992) observed that the gender gap in science achievement is closing. The researcher observed that in Nigeria. Many parents are weak in expectation and parental support such that encouragement particularly for girl is minimal. This trend has a change to create equal favourable opportunities for both sexes to participate in Physics education for greater achievement, for science and technology may change as a result of wider participation of women who form a large bulk of our population.
Conclusion

Gender was significantly related to senior secondary school Physics students’ understanding of Physics concepts but not a significant predictor of their attainment in SSCE. The observed gender difference in understanding Physics concepts appears to explain gender gap in Physics education in Nigeria. Since the gender difference in attainment in physics is in favour of boys, Physics teachers should take this into consideration when teaching female students. Another implication is that being a male appears to have significantly promoted achievement in physics in school. Physics teachers should stimulate and motivate female students to compete favourably with male students. Since understanding of Physics concepts is gender related in terms, balance have to be maintained by Physics teachers so that one sex does not have undue advantage over the other especially in the mixed schools. It is recommended that to enhance participation of both sexes in Physics education for better performance, obstacles and impediments that deny girls access and hinder their participation in Physics education should be identified and removed. The requirements may be daunting; however this may hold the key to the relevant and viable physics education in the twenty first century.

References


Gender and Achievements in Senior Secondary School Physics


FREE RADICALS IN FOOD AND BIOLOGICAL SYSTEMS
A REVIEW

Elkenah C. Ndie

Introduction
Free radicals are those components that due to their chemical nature are more reactive than other components within their environments. Free radicals are found both in the food and also in the body at cellular levels. Nutritionists are interested in free radicals first because of their actions on food deteriorations and secondly because of their toxic effect on the body. Recently a lot of nutritional advices in food journals and magazines are focused on use of antioxidants to counter the action of free radicals both in food and in the body. The aim of this review is to summarize some key papers with regards to free radicals in food and biological systems as well as their control.

Chemistry of free radicals: According to Found (2005) free radicals can be generated by any of the following mechanism.

1, Hemolytic cleavage of a covalent bond, in which a normal molecule fragments into two, each fragment retains one of the paired electrons. Hemolytic cleavage occurs less commonly in biological systems as it requires high – energy input. It is common in food irradiation and in deep fat frying.

2, Loss of a single- elections from a normal molecule.

3, Addition of an election from a normal molecule.
The fundamental fact about radical is that the unpaired elections in their outer shall do not affect the charge on the resultant and molecules free radicals can be negatively charged, positively charged or electrically neutral. This is because charge concerned with the number of negatively charged electrons in relation to the positively charged protons whereas free radicals are related only to the spatial arrangement of the outer electron.
The unpaired elections may have been gained on top of a neutral molecule making it negative; alternatively, it may have resulted from the loss of an electron from the same molecule resulting in a positive charge. Likewise, if the original molecule was not neutral to begin with, the addition or removal of an unpaired electron would result in a neutral charge. Free radicals are atoms or molecules that have at least one unpaired electron, which makes them very reactive with other molecules (Bates 2005).
1.3 Generation of free radical: The free radicals are generated in food and in
the body due to oxidative stress. The oxidative stress is defined as the
state in which the level of reactive oxygen intermediates (ROI) overcome
the antioxidant in the food or in the body. Some of the conditions that
induce the oxidative stress were described in details by Giese (1996).

i. **Fat frying:** Lipolysis is a major reaction occurring during deep fat frying
due to the large amounts of water introduced from the food and the
relatively high temperature at which the oils is maintained. The high
temperature of deep fat frying leads to generation of free radicals in fried
food. Free radicals formation, propagation and termination scheme has
been postulated as follows (Nawar 1985).

\[
\begin{align*}
\text{Initiator} & \quad K & \text{free radical} & \quad (R^*, \text{ROO}^*) & \quad \text{I} \\
R^* + O_2 & \quad K_2 & \text{ROO}^* & \quad \text{2} \\
\text{Propagation} & \quad & & \\
\text{ROO}^* + \text{RN} & \quad K_4 & \text{R} - \text{R} & \quad \text{3} \\
R^* + R^* & \quad K_4 & \text{R-R} & \quad \text{4} \\
\text{Termination} & \quad & & \\
\text{ROO}^* + \text{ROO}^* & \quad K_5 & \text{ROOR} & \quad \text{5} \\
\text{ROO}^* + \text{ROO}^* & \quad K_6 & \text{ROOR} + O_2 & \quad \text{6}
\end{align*}
\]

The chemistry of lipid oxidation at high temperature is complex since
both thermolytic and oxidative reaction are simultaneously involved. Both
saturated and unsaturated fatty acids undergo chemical decomposition when
exposed to heat in the presence of oxygen (Herbert 1994 and Giese 1996).

The first of this series of reaction starts with the initiation step. The fat
free radicals are formed when loosely held hydrogen atoms are lost from fatty
acid group. The resultant fat free radical react with oxygen to form peroxyl free
radicals. These peroxyl free radicals act as strong initiators or catalyst of further
oxidation by extracting hydrogen from another molecule.

In propagation, the peroxyl radicals remove a hydrogen atom from a lipid
to form a relatively stable hydro peroxide and a new unstable fatty acid free
radical. The unstable fatty acid free radical will then react with oxygen to firm
another new peroxyl radical. The final reaction occur when two unstable free
radicals react to form a stable compound (Maclord 1994).
ii. **Food irradiation process:** Urbain (1996) stated that generation of free radicals by gamma irradiation in biological materials starts with knocking out a quantum of election from water in the environment as follows.

\[ \text{H}_2\text{O} \xrightarrow{\text{H}_2\text{O} + \text{e}} \]

The ejected electron may have enough energy to repeat the above reaction or may be captured to form a negative water ion.

\[ \text{H}_2\text{O}^+ + \text{e(aq)} \xrightarrow{\text{H}_2\text{O}} \]

The positive and negative water ions dissociate as follows

\[ \text{H}_2\text{O}^+ \xrightarrow{\text{H}^+ + \text{OH}^*} \]

\[ \text{H}_2\text{O}^- \xrightarrow{\text{H}^+ + \text{OH}^*} \]

The H* (free radical) may react with oxygen to form an oxide free radical such as \(\text{H}_2\text{O}^\dagger\) via

\[ \text{H}^* + \text{O}_2 \xrightarrow{\text{H}_2\text{O}^*} \]

\[ \text{HO}_2^* + \text{H}^+ \xrightarrow{\text{H}_2\text{O}_2} \]

These free radicals are found in food preserved by gamma irradiation (Wang and Brynolfussian 1993, Okoli, 1998)

iii. **Enzymatic oxidation:** Fun (2005) stated that a variety of enzymes (most of which are used in food processing) are capable of generation significant amount of free radicals. The enzymes include xanthenes oxidase, prostaglandins, synthase, lipoxygenase and amino acid oxidase.

iv. **Transition metal ions:** Iron and copper play a major role in the generation of free radicals and the facilitation of lipid peroxidation participate in the Haber-Weiss reaction that generates OH from \(\text{O}_2\) and \(\text{H}_2\text{O}_2\)

\[ \text{H}_2\text{O}_2 + \text{Fe}^{2+} \xrightarrow{\text{OH} + \text{OH} + \text{Fe}} \]
The Haber-Weiss reaction accelerates the nonenzymatic oxidation of molecules such as epinephrine and glutathione that generates \( \text{O}_2 \) and \( \text{H}_2\text{O}_2 \) and subsequently, OH. (Hirs 1967).

v. **Tissue injuries**: Tissue injury confers a number of effects that contribute to the production of free radicals. Normally xanthine oxidase is known to catalyze the reaction of hypoxanthine to xanthine and subsequently xanthine to uric acid. This reaction requires an electron acceptor as a co-factor. During tissue injuring two factors occur, first the production of xanthine and xanthine oxidase are greatly enhanced. Secondly, there is a loss of both antioxidants superoxide dismutase and glutathione peroxides. The molecular oxygen supplied on reperfusion serves as an electron acceptor and cofactor for xanthine oxidase catalyzed reaction and generate free radicals in skeletal muscles and myocardium (Hu and Cassaine 2000, Found 2005).

**Measurement of free radicals and antioxidants**: There is an increase interest in need for techniques to measure free radicals and antioxidants both in vivo and invitro. Many technical problems are encountered in measurement of free radicals and antioxidants. The problems are four:

i. **The ultra** – short half-life of these radicals (usually measured in microsecond.)

ii. Free radicals produced in vivo and in vitro react very close to their source of formation. So the methods to quantify free radicals are usually indirect.

iii. Many of the products formed from the radicals are themselves reactive although to a lesser degree.

iv. The only samples that are readily available for measure of free radicals in the body of man and animals are urine, blood and expired breath and it is almost impossible for free radicals observed or produced in intestine measured because of very short half life, (Brunswick 2006). To overcome the above problems the following methods have been developed though with limitation (Brunsick 2006).

i. **Assay methods**: Some laboratories have developed assay method for specific free radicals. Brunswick’s laboratories have develop assay method which they called ORAC free radical tests. Brunswick’s prepared assay can be used to quantify peroxyl, hydroxyl, and super oxide. The major problems of this test is that the sample must be urine, blood, expired air or sweat which may not give true picture in the body.

ii. The only analytic technique that directly measures free radical is Electron Resonance Spectrometry. It involves the addition of a
compound known as a spin trap that rapidly with free radicals to form products that are very much more stable and have longer half-life than the original species. The use of this method is limited in vivo for the fact that it requires concentration of free radicals in the macromolecular range and this may be impossible.

iii. Measurement of non-radical products of free radicals. Here the compound produced when the free radicals react with antioxidants are measured these substances are not produced normally hence their presence is evidence of free radical production. This method again can only produce semi-quantitative data.

iv. Measurement of DNA damage: Free radical are known to produce irreversible modification in DNA. These DNA products and the repair enzymes are excreted in urine either as free base or as the nucleoside derivatives. These products can form on index of free radical attacks against DNA. This method is limited due to the obscurity of the tissue of original of the products.

**Mode of Actions of Antioxidants in Biological System**

From available literature the productive system against oxidative stress caused by free radicals in the biological systems include enzymes such as superoxidase and dimutase as well as antioxidants and radical scavenger such as tocopherol (vit.E), B-carotenes, methionine and ascorbic acid (Steinbery 1993) Vitamin E and C and B-carotene get rid of free radical in the body system making them less harmful. According to steinbery (1993), this reaction turns vitamin E itself into a potentially damaging radical that in turn react with B-carotene which inactivate the newly firmed vitamin E radical. Finally vitamin C in turn neutralize the resulting carotene and since the complex with vitamin C is soluble it is ultimately excreted through the urine. In other words for effective antioxidant action in the biological system vitamin E, C, and B-carotene are needed in the diet.

Levine and Stondmon (1997) in their study of methionine residues as endogenous antioxidants in protein stated that amino acid methionine function as a protein ultimate defiance against free radical damages. Methionine is an essential amino acid chemicals structure.

\[ \text{CH}_3\text{-S-CH}_2\text{-CH(NH}_2\text{)COOH} \]

It is sulfur containing amino acid and since sulfur has six electrons on its valency, Lewis formula is C:S:C.
According to the two free electron makes it a good antioxidant and may engage either one or both of the free electron pairs of sulfur resulting in the formation of methionine sulfoxide.

\[
\begin{align*}
\text{CH}_3 \\
\text{S}=\text{O} \quad & \quad \text{methionine sulfoxide} \\
\text{R} \\
\downarrow \\
\text{CH}_3 \\
\uparrow \\
\text{O=S=O} \quad & \quad \text{methionine sulfane} \\
\text{R}
\end{align*}
\]

Oxidation of methionine to the reversible methionine sulfoxide by the free radicals occur preferentially when other amino acids are present and none of the free radicals identified in food oxidize methionine beyond the sulfoxide state. Moreover these studies also show that some enzymes can restore methionine sulfoxide to its original state, thereby setting up a cycle that renews its protective antioxidant activities. Hires (1997) stated that formation of methionine sulfane which is more stable than sulfoxide required harsh treatment. Such treatments are not likely to by obtained in the biological system.

Amen’s et al., (1983) in their own study stated that catalyze oxidation of uric acid by organic free radicals like myeloperoxidase, cytochrome oxidase and hydroperoxidase occur in the body. Based on the above findings, they went on to postulate that the role of urates is to help suppress lipid oxidation in erythrocytes and as well as a scavenger of singlet oxygen, hydrogen, radicals and oxo-heme oxidants. The increase in urate level in exercise, lead exposure and obesity suggest a causal relationship with free radical generation.

**Conclusion**

From the on going discussion, it is clear that free radicals in food get into the body but the effect have not been established and till this is done nutritionist should continue to view the free radicals in processed food in terms of their effect on food spoilage. It have been clearly demonstrated that food nutrients like vitamin E and C, B- carotene and methionine have controlling effect on the damage to the body by free radicals generated during the body metabolism. It is then the duty of the food scientist and nutritionist to develop methods of supplementing these food nutrients in processed food. This is to
enable health educators like public health nurses to educate the general public on the right food that are rich in antioxidants rather than giving speculative scientific informations.

References


Shechlor, Y. Burstein, Y., & Patchormik, A (1975) Selective Oxidation of methionine residues on proteins, Biochemistry, 14 : 2341-2346


EFFECTIVE TEACHING OF READING AND PUPILS’ ACHIEVEMENT AT PRIMARY SIX IN KANO STATE

Dr. S. P. Orame Alaku

Abstract

Reading is one of the major skills of English language. It is a key to attaining knowledge from all forms of prints. Acquisition of reading skills is therefore very important to pupils’ education. However, reading poses a problem with the result that most pupils graduating from primary schools lack the necessary competence to read effectively. Efforts by State and Federal Governments with the assistance from UNICEF and World Bank for teaching and learning improvement seem to yield no better outcome. This study investigated the ineffectiveness of teaching reading skills and poor performance in the skill among primary six pupils in Kano State. Through the instruments of modified language observation scheme and questionnaire indicating teaching qualification and teaching performance vis-à-vis pupils’ achievement, modified common entrance examination into Government Secondary Schools, the problems encountered in teaching reading such as teachers’ incompetence and inadequate provision of reading texts were identified. Recommendations like providing adequate reading periods on the timetable, workshops, textbooks and reviewing the reading skill aspects of curriculum to meet up with the current academic standard needed in the country were adduced for remediation.

Introduction

Reading is one of the main language skills in the study of English Language. It is an aspect that seems problematic for children within the school system. Consequently, majority of the pupils in schools are failing to learn to read and many more are unable to read to learn (Umolu, 1998; Bunza, 1997). The pupils’ performance in reading and English in general appears to be poor on graduation from primary school in Kano State and Nigeria in general. As a result, there have been complaints among parents, teachers and the general public about the ineffectiveness and poor performance in reading skill at the elementary level of education (Olaofe, 2005; Oyetunde, 2009). In Primary six, most of the pupils lack the necessary knowledge and competence in English language to pass entrance examinations into post-primary institutions. In Kano State public primary schools for example, out of 3,174 candidates that sat for 2007/2008 entrance examination into State Government Secondary Schools, only 1,550 (48%) were successful in English language examination section that had to be read and comprehended before writing the correct answer (Bello, 2008). Therefore, pupils’ reading achievement was low in the examination.
It could be argued that one of the reasons for poor performance of the children is teachers’ ineffectiveness in teaching reading. The findings of Umolu (1998) and Olaofe (2005) revealed inadequate preparation of teachers, ignorance of teachers in appreciating the difference between teaching English and teaching reading with the result that reading is not usually conceived of as something separate from English to be on the timetable of most primary schools in Nigeria; and that attempt to teach reading is casually and superficially done, resulting in reading being caught and not adequately taught in the classroom.

Attempts by Federal and State Governments to improve primary school teachers’ effectiveness through Universal Basic Education Commission (UBEC) and assistance from some international agencies like UNICEF, UNESCO and World Bank seem a failure as there appears to be no significant improvement (Adeyanju, 2008). This study is desired to explore ways the teacher could be effective to enhance pupils’ performance and achievement in the skill of reading at the primary school in Kano State.

Statement of Problem

The major problem of this study is teachers’ low effectiveness in teaching reading skills and pupils’ poor attainment at the primary school with particular reference to primary six.

One other problem is in the area of the teachers’ qualification and subsequent on-the-job-training to confidently handle the teaching of reading skills in the syllabus at the primary level, as inadequate preparation of the teacher is said to be one of the major causes of teachers’ ineffectiveness and pupils’ poor performance in reading (Umolu, 1998). Another area of the study is the teacher of English’s apparently low competence and ineffectiveness in using instructional materials and approaches to teach reading skill, which is one of the major components of English for pupils’ attainment of proficiency in the language. These make the teaching of reading at the elementary school deplorable as most graduates of the school cannot read effectively.

Research Method

The study is an empirical one that explored the relationship between teachers’ effectiveness in teaching reading skill of English and pupils’ achievement in the skill at primary six public schools in Kano State. Through random sampling by hat and draw method, the field work was carried out in 120 out of 2,061 public primary schools in the State. Primary six teachers of English in the sampled schools served as respondents to the teachers’ questionnaire, making a total of 120 teachers. Four (4) out of the average population of forty (40) pupils per class were also sampled as respondents to pupils’ test questions, making a total of 480 pupils.

Instruments used for the study included questionnaire for teachers of oral English, classroom observation of teachers of English, teaching reading skills
Effective Teaching of Reading and Pupils’ Achievement at Primary Six in Kano State

with the use of modified Target Language Observation Scheme (TALOS) and modified state common entrance examination into Government Secondary Schools in the State. Respondents’ answer scripts were marked by the classroom teachers of English themselves. Each teacher’s marked scripts were assessed against the correct model answers. The researcher’s assessment of the teachers’ marked scripts was to find out the extent of teachers’ competence in the reading skill. The main items of the questionnaire and observation rating include teachers’ qualification and pupils’ performance, pre-lesson preparation and effectiveness in teaching reading skill.

Simple percentage and chi-square statistics at 0.05 significant level were used to find the degree of the effectiveness in teaching the reading skills. Analysis of Variance (ANOVA) was also used to find out the extent of pupils’ performance by the qualification of the teachers.

Findings
Teachers’ Qualification and Pupils’ Performance

The qualifications of teachers and their corresponding achievement in teaching reading were the variables involved in the test. One way Analysis of Variance (ANOVA) was used for the statistical analysis. The use of the one way analysis of variance was informed by the more than two groups of the independent variables on teachers’ qualifications (Olomolaiye, 1986). In table I, the result showed no significant difference existed between the different qualifications of the teachers and their effectiveness with regards to pupils’ performance in reading at primary six. That is, NCE, Grade II passed and Grade II failed.

Table I: One Way Analysis of Variance on Pupils’ Performance by Teachers’ Qualifications

<table>
<thead>
<tr>
<th>Variable</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>33.3778</td>
<td>16.6889</td>
<td>2.8899</td>
<td>0.0567</td>
</tr>
<tr>
<td>Within groups</td>
<td>2390.7980</td>
<td>5.7749</td>
<td>2.8899</td>
<td>0.0567</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>416</td>
<td>2424.1758</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F-Critical = 3.00; P = 0.06 (not significant)

The table showed that no significant difference existed among the teachers between their qualifications and their effectiveness in teaching reading skill. This means that the teachers with the various qualifications of NCE, “Grade II passed” and “Grade II failed” teach with the same degree of effectiveness and pupils’ achievement in reading skill.
Teachers’ Effectiveness in Teaching Reading and Pupils’ Achievement in the Language Skill

The teachers’ perceived effectiveness in teaching reading and the researchers’ actual observation rating were also summarized as shown in table II.

Table II: Teachers’ Perceived Effectiveness in teaching Reading and Actual Observation

<table>
<thead>
<tr>
<th>Rating Options</th>
<th>Teachers’ Perception</th>
<th>Actual Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>Extremely low</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Low</td>
<td>4</td>
<td>3.3</td>
</tr>
<tr>
<td>Fair</td>
<td>21</td>
<td>17.5</td>
</tr>
<tr>
<td>High</td>
<td>44</td>
<td>36.7</td>
</tr>
<tr>
<td>Extremely high</td>
<td>51</td>
<td>42.5</td>
</tr>
</tbody>
</table>

DF = 4; Chi-square = 147.37  P < 0.05 (significant)

The perception rating was exaggerated. 1.7% of the teachers were observed to be high in their effectiveness in teaching reading while the teachers over-rated (36.7%) themselves to be so high. However, majority (75.8%) of the teachers were observed to be fair (average) in their teaching effectiveness.

Reading faults like repetition, regression and head-movement were common features among the teachers during the observation of teaching reading skill. The reading of almost every sentence was followed by its translation and explanation in L₁. Pupils were not initiated to provide meanings to seemingly new words. The teacher gives the meaning of the new words in L₂ and L₁ without its practice and use in context. There was only one classroom reading text with inadequate number for the pupils. Consequently, two or more pupils had to share a text. Only few teachers had the Teachers’ Guide to the text.

The text was followed strictly without regard to modern methods of teaching reading such as group activities, pair activities, cooperative reading activities, role play, lesson plan and use of instructional aids. At the end of the lesson, the textbooks were collected from the pupils by the teacher.

Discussion

It is seen from the findings that the teachers’ perception on reading as rated in the questionnaire was generally higher than that of the observational rating. Inadequate knowledge and incompetence in the reading skill among the teachers might be the cause of the rating nature. It could as well be that the teachers were ignorant of the precise things to do. Furthermore, it could be that the teachers have a higher opinion of their performance in reading than they can actually perform. Indeed, this portrays that the teachers’ preparatory training knowledge in the reading skill might have been grossly inadequate and not
achieved. This is because an appropriate and adequately trained teacher of English should teach more effectively to enable pupils’ achievement in the language skills, and the reverse is the case with an inappropriate and inadequately trained teacher of English. This is in agreement with the assertion of Olaofe (2005) that when a considerable number of teachers are untrained and unqualified the tendency to teach the language inefficiently and provide poor models for the pupils to imitate and learn is real. This situation does not make for pupils’ achievement in the language skill.

The findings revealed no significant difference between the NCE, “Grade II teachers passed” and “Grade II teachers failed” in their effectiveness and pupils’ achievement in the reading skill as seen in table I analysis of the data. This implies that the three categories of teachers teach with equal degree of effectiveness. Teachers with NCE possess higher qualification and are supposed to be more knowledgeable and teach better than “Grade II teachers passed” and “Grade II teachers failed” who have ordinary level qualification only. The implication is that NCE reading skill curriculum needs to be reviewed to meet the current education standard required in the country.

**Conclusion and Recommendation**

Teachers’ performance in teaching reading portrayed inadequate knowledge of teacher training preparation programme and its application in classroom situation for pupils’ achievement in the language skill. There was lack of fluency in reading coupled with head-movement, regression and reading word by word instead of reading in phrases. The classroom English reader was inadequate for the number of pupils in the classes. Pupils were lacking reading textbooks.

The conclusions above imply that teacher effectiveness in teaching reading skill for achievement of pupils in the language at primary six is greatly lacking. In order to solve this problem, it is recommended that all teachers of English should be trained to attain the minimum qualification of NCE in the language. The reading skill curriculum should be reviewed adequately to meet up with the current academic standard required in the country. Workshop in reading skills should be organized annually to update the teachers’ knowledge on the language skill, its teaching methods and techniques. Furthermore, adequate number of classroom English readers should be provided for each pupil. The pupils should be allowed to keep the reading textbooks with them for their own reading practice at home after school. A table-library should also be provided with suitable books for the pupils in the classroom. Teachers should have lesson plans prepared with appropriate instructional aids for every lesson before commencement of teaching. Finally, reading periods for English lessons should be adequately fixed on the timetable.
References


PROXIMATE ANALYSIS & CHARACTERIZATION OF THE SEED AND OIL OF ANNONA MURICATA (SOURSOP)

A.B.C Nzekwe and F.N Nzekwe

Abstract

Annona muricata is a plant that grows in the tropical West Africa. It has sweet fruits, not really sour as its name suggests. The seeds were removed from the fruits and dried for eight (8) days after which it was grinded to powder. Direct method of extraction was used to extract the oil for analyses. The proximate analyses carried out to determine the moisture content, ash content, acid value, iodine value and saponification value confirmed that the seed have moisture content (2.17%), ash content (60%), acid value (10.02), free fatty acid value (5.04), iodine value (96.44) and saponification value (157). The results shows that the seed is rich in mineral elements with the oil less susceptible to oxidative rancidity, non-drying and can be used for the production of soaps, shampoo etc.

Introduction

Annona muricata is a plant that grows in the tropical West Africa. The trees are about 7.5 – 9.0m tall. Young branchlets are rusty – hairy with smooth, glossy dark green leaves which are oblong (to elliptical) and pointed at both ends. The fruit is more or less oval or heart-shaped, though it tends to be lopsided or curved. The fruit is variable in size, ranging from 10 – 30cm long and up to 15cm width and can weigh as much as 6.8kg (Cowan, 1990). The skin is dark green in the immature fruits, becoming slightly yellowish – green before the mature fruits is soft to touch. The inside of the skin is cream coloured and granular. The white flesh which is the edible part of the flesh is fibrous and juicy and separates easily from the rind. The fruit is segmented with some segments containing a single oval, smooth, hard black seed of 1.25 – 2.00cm long. A large fruit may contain from a few dozen to 200 or more seeds (Ihekoronye and Ngoddy, 1985).

Fruits generally are important foods since they are the source of many essential vitamins, minerals and other food components. Some contain moderate amount of carbohydrate in the form of glucose, starch and fats. The varied nutrient values are to a large extent, dependent on the sun light and growing climate (Peckham and Gladys, 1974).

Proximate analyses which includes acid value determination, moisture content, saponification value, percentage oil yield, iodine value and ash content enables one to know the exact amount in each fruit consumed as well as other areas or uses to which the fruit can be put.
**Materials and Method**

The seeds of *Annona muricata* (soursop) that was used for the work were bought at Eke Market, Ekwulobia in Aguata Local Government Area of Anambra State. The seeds were removed from the fruits and air dried for 8 days. The seeds and their coats were ground into a powder using manual grinder. Standard methods were employed for the proximate analyses and characterization — extraction and determination of the % oil, ash content, moisture content, acid value, free fatty acid (\(\frac{1}{2}\) of the acid value), iodine value and saponification value, (Mamman, 2000; Amos and Jones, 1975).

**Results and Discussion**

The results on the proximate analyses of the seed of *Annona muricata* are shown in Table 1. The results obtained shows that the % of oil yield was low (35%), light in colour and did not solidify at room temperature, therefore, it is an unsaturated oil. The ash content was found to be 60%. It shows that the seeds contain a good quantity of mineral elements which makes them useful in animal feed formulation and production of fertilizer. The moisture content was 2.17%. The low percentage is indicative of a long shelf life i.e. the length of time the seeds remain usable or viable.

The acid value of the seed was low (10.08) and therefore, less susceptible to oxidative rancidity. It is also fit for human consumption. The low value of free fatty acid is indication of the quantity of fatty acid contained in the seeds.

With a value of 96.44 for the iodine content, the oil from *Annona muricata* seeds can be said to be non-drying.

The result of the saponification value was high (157) which proves that it contains fatty acids of low mean molecular mass and could be used for soaps, shampoo, varnish etc.

**Table 1: Results of the proximate analyses and characterization of the oil of *Annona muricata*.**

<table>
<thead>
<tr>
<th>S/N</th>
<th>Parameters</th>
<th>Values</th>
<th>Characterization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Percentage of oil yield</td>
<td>35%</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Colour of oil</td>
<td>Light Brown</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Appearance</td>
<td>-</td>
<td>Do not solidify @ room temp. It is an unsaturated oil.</td>
</tr>
<tr>
<td>4</td>
<td>Ash content</td>
<td>60%</td>
<td>Rich in mineral elements. Useful for animal feeds &amp; Fertilizer production.</td>
</tr>
<tr>
<td>5</td>
<td>Moisture Content</td>
<td>2.17%</td>
<td>Low content implies long shelf life.</td>
</tr>
<tr>
<td>6</td>
<td>Acid Value</td>
<td>10.08</td>
<td>Less susceptible to oxidative rancidity. Fit for human consumption</td>
</tr>
<tr>
<td>7</td>
<td>Free Fatty Acid</td>
<td>5.04</td>
<td>Low fatty acid content</td>
</tr>
</tbody>
</table>
Proximate Analysis & Characterization of the Seed and Oil of Annona Muricata

<table>
<thead>
<tr>
<th></th>
<th>Iodine Value</th>
<th>96.44</th>
<th>Non-drying oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Saponification Value</td>
<td>157</td>
<td>Can be used for toilet soaps, shampoo, varnishes etc.</td>
</tr>
</tbody>
</table>

**Conclusion**

The results of the analyses on the seeds of *Annona muricata* shows that the seeds are very useful to man. The low acid value qualifies it fit for human consumption and its high saponification value makes it a good raw material for soaps, shampoo, varnish etc.

**Recommendation**

The findings in this research clearly brings to light, the usefulness of both the seeds and oil of *Annona muricata*. Manufacturers of animal feeds, fertilizer and toiletries should explore their use. Furthermore, more research into this seed of *Annona muricata* is encouraged to ascertain other viable content.

**References**


INFLUENCE OF GENDER ON STUDENTS’ ATTITUDE TOWARDS BIOLOGY IN ENUGU EAST LOCAL GOVERNMENT AREA OF ENUGU STATE

Casmir N. Ebuoh (Ph.D)

Abstract

The consistent reports on gender inequity in biology have lead to a research for its influence on attitude. In this connection, gender has been reported to facilitate meaningful learning of biological (science) concepts. Consequently, the study sought to investigate the influence of gender on students’ attitude towards Biology. A survey design was adopted and population of 2226 biology students was composed. The stratified and proportional random sampling techniques were used to sample 414 students from 9 secondary schools. Instrument used for data collection was questionnaire on student’s attitude towards Biology (SATB). This was developed by the researcher. The instrument was validated using face validity. The reliability of SATB was determined using Cronbach alpha to be 0.83. The research question was answered using mean and analysis of covariance was used to test the hypothesis. Result showed that gender was found not to exert any significant influence on the attitudes of students towards Biology based on the finding recommendations were made.

Introduction

The question of gender influence on Biology attitude has generated a lot of concern in science Education. Research has clearly shown that this is an important factor which affects both the individual’s achievement/performance and preference for science careers (Jacobwitz, 1983). Evidence also abounds of differential performance of males and females relative to learning modes. For example, Osisioma (1995) reported that females work better in cooperative settings while makes do better work in individualistic settings. This may probably be related to their attitudinal dispositions. Therefore, attitude toward science in general and Biology in particular is linearly related to good achievement in Biology (Oluyemi, 1985). This implies that attitude towards science is very important variable in the teaching and learning of science since it may probably affect Biology achievement. The study therefore sought to explore the influence of gender on student’s attitude towards Biology.

There has been report on gender imbalance in (sciences) Biology which has been found to account for the negative attitude of girls in (sciences) Biology and Technology. Lagoke, Jegede and Oyebanji (1995) six factors have been found to be responsible for the gender imbalance and negative attitude towards (science) Biology. These are: individual cognitive, home and family, educational, socio-cultural and attitudinal factors. There is therefore a need for intervention programme to be mounted with a view to
(i) demasculinize and demystify Biology (science)
(ii) develop their skills of doing biology (science) and
(iii) Improve girls’ confidence and attitude towards biology (science).

Positive Biology attitude of students has long been recognized as a major factor in the goals of modern science programmes in schools. Attitude to biology has therefore been reported to correlate positively with biology (science) achievement (Odumusi, 1984). Attitudes have generally been regarded as either mental readiness or implicit predispositions that exert some general and consistent influence on a fairly large class of evaluating responses. Blair, Jones and Simpson (1975) described attitude as the feeling of favourableness toward some psychological object. Attitude is a mental and neutral state of readiness organized through experience, exerting a directive and dynamic influence upon the individuals response to all objects and situations with which it is related.

Soyibo (1986) listed some general characteristic of attitude as:
(a) attitude is a predisposition to respond, that is readiness to behaviour rather than actual behaviour toward an attitude object.
(b) Attitude is amendable to change that is the alteration of attitude especially that which is strongly held, requires substantial press.
(c) It produces consistency among its various manifestations, in an individual’s behaviour toward an attitude object.
(d) Attitude has intensity and a directional quality, that is, connotes preference regarding outcomes involving the object, evaluations of the object or positive/negative affections for the object.
(e) Attitude results from experience and therefore is learned, that is, acquired through experiences that have profound affective component and more than different forms of learning are transmitted through the process of imitation, modeling and identification within the peer group.
(f) Attitude remains latent until associated signs or objects evoke it to influence the behaviour of the individual towards the stimulus sign or object.

Based on the foregoing attitude can be seen as having three components; affect (emotion), cognition and behaviour (action tendency). The affect involves feelings of like/dislike, love/hate, sympathetic nervous system responses and verbal statements of affect. The cognition involves perceptual responses, beliefs about or factual knowledge of the object and verbal statements of cognition, verbal statements concerning overt actions, action tendencies, verbal statements concerning behaviour (Ayanwu, 1993). These three components are related and hence exert a mutual influence on attitude.

Attitudes affect learning through their influence on perception which leads the child to see tasks to be learned as pleasant and important, or as unpleasant and useless. The way people think is directed by an organic interaction of the cognitive and affective processes and are inter-related
In agreement with these positions, Bruner (1960) suggests that positive attitude towards school and biology enables students to achieve superior academic gains, in their school biology subjects. This section of the review focuses on studies on gender and attitudes of students towards biology. Gender as a factor in biology has for some time now generated a lot of concern for biology teachers. This concern arose from emerging data on differential gender in Biology. A review of the literature on gender differences reveals that there has a yet not been any clear picture concerning this issue. Several factors have been found responsible for the gender imbalance in Biology. Lagoke, Jegede and Oyebanji (1995) reported that these factors could be grouped into six broad categories individual, cognitive, attitudinal, home and family, education and socio-cultural factors. Lagoke, Jegede and Oyebanji (1995) reported that intervention pregnancies have been mounted in several parts of the world to engage girls and women more in biology and biology related carriers aimed at

(i) demasculizing and demystigying biology
(ii) improving girls’ confidence and self-perception of their ability to do biology.
(iii) Implementing attitudinal behaviours that actively involved girls in biology (science) lessons; and developing girls’ skills of doing science. While two decades of intervention indicate that the gender gap is closing in mathematics attitude, unfortunately the reverse is the case with (science) biology attitude. Vetter (1990) found that in the United States of America (USA) women constitute only sixteen percent of all employed biologists and scientist while thirty percent and twenty one percent of degree awarded at the bachelors and doctorate degrees in natural science and engineering respectively go to women. Similarly, Science Teachers Association of Nigeria (1992) reported that less than ten percent of the total enrolment in Nigerian universities for science and technology based disciplines are females, only six percent of those who enrolled in West African and the senior secondary school certificate examinations are girls and less than five percent of the academic staff in Nigeria universities engaged in biology related disciplines are women. This gender imbalance in Biology attitude is a serious clog in the wheel of progress of every nation including Nigeria especially as females make up about sixty percent of the country’s one hundred and forty million inhabitants.

Jacobwitz (1983) investigated the relationship of specific variables to the biology career performances of black eight grade students. One of these variables as the sex of the child on which other variables depend namely: biology self-concept, biology achievement and mathematics achievement. The biology career preference scale was administered on 261 eight grade black students of an inner city junior high school in new assessed using the biology subscale of the self-concept and ability scale, and eight grade mathematics and biology achievement were measured by using grades obtained by students for the third quarter of the
academic year. Means and standard deviation of mathematics and biology achievement, biology self-concept and biology career preferences were obtained for males and females.

A t-test analysis showed that there was no significant difference in the mean scores of the sexes in Mathematics and biology achievement, while significant differences existed between the mean scores of biology self-concept and biology career preferences in favour of males. It was therefore concluded that gender is a better predictor of science career preferences than any of the other variables.

Similarly, Nworgu (1988) investigated the interaction between gender and content area in physics. He made use of 564 final year secondary school physics students from 16 secondary schools. Physics achievement test (PAT) which was made up of 65 multiple choice test items with a reliability coefficient of 0.81 was used to collect relevant data. The result of the 2-way analysis of variance (ANOVA) used for analysis revealed a significant (P<0.01) gender by content area interaction. This led to the conclusion that although males tended to be superior to their female counterparts in physics achievement the superiority was not evident across all content areas in physics.

The pertinent question therefore at this point is: will gender have any significant influence on students’ attitude towards Biology (Science).

The purpose of the study was to find out the influence of gender on the SS II students’ attitude to Biology.

The scope was limited to find out the influence of gender on Senior Secondary (SS II) students’ attitude towards biology in Enugu East Local Government Area of Enugu State. The justification for the choice is based on the fact that the SS I students would not have formed their impression about the subject at that level to be used for the study while SS III class being examination class will be too examination conscious to be ideal for the study.

What is the difference in the mean attitude of SS II male and female students towards Biology of male and female students?

There is no significant difference in the mean attitude of male and female SS II biology students towards Biology.

Methodology

The methodology was approached under the following subheadings: design, area of study, population, sample and sampling techniques, instrument for data collection, validity, reliability and method of data collection and analysis.

The study was a survey design. The design is a study that has to do with gathering of facts, rather than manipulation of variable to provide important and useful information for educational decision making. The study therefore is aimed at gathering information on the influence of gender on attitude in biology without manipulating the subjects.
The study was carried out in the secondary schools in Enugu East Local Government Area of Enugu State.

The population of the study comprised all the 2223 senior secondary school three (SS 3) biology students in all the nine secondary schools in the Local Government Area. (See table I below)

The four hundred and fourteen stratified senior secondary schools biology students in the Local Government Area were randomly sampled using stratified and proportionate sampling technique. A sample of 20% of biology students were sampled from each school. The schools were stratified using type variable to ensure appropriate representation. Two of each type was sample using random sampling technique (balloting without replacement) to select a total of six schools. (See table I below)

Table I
The number of students (Population) and sampled students per school.

<table>
<thead>
<tr>
<th>S/N</th>
<th>Name of School</th>
<th>School Type</th>
<th>No of Students (Population)</th>
<th>No of sampled students per school (sample size)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Community Sec. School Ugwuogo Nike, Enugu</td>
<td>Co-educational</td>
<td>256</td>
<td>51</td>
</tr>
<tr>
<td>2.</td>
<td>Girls Sec. Sch. Abakpa Nike, Enugu</td>
<td>Girls</td>
<td>238</td>
<td>48</td>
</tr>
<tr>
<td>3.</td>
<td>National Grammar School, Nike, Enugu</td>
<td>Boys</td>
<td>306</td>
<td>61</td>
</tr>
<tr>
<td>4.</td>
<td>St. Patrick Sec. Sch, Emene</td>
<td>Boys</td>
<td>273</td>
<td>56</td>
</tr>
<tr>
<td>5.</td>
<td>Trans Ekulu Girls’ Sec School Abakpa Nike, Enugu</td>
<td>Girls</td>
<td>258</td>
<td>55</td>
</tr>
<tr>
<td>7.</td>
<td>Comm. High Sch Emene</td>
<td>Co-educational</td>
<td>194</td>
<td>57</td>
</tr>
<tr>
<td>8.</td>
<td>Announciation Comm. Sec. Sch Nkwo Nike, Enugu</td>
<td>“</td>
<td>183</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>New Heaven Boys’ Sec. Sch Enugu</td>
<td>Boys</td>
<td>233</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>2223</strong></td>
<td><strong>414</strong></td>
</tr>
</tbody>
</table>

* Sampled Schools
Student attitude towards Biology (SATB) was used for data collection and was constructed by the researcher. The SATB is made up of 30 items.

The 30 items of SATB was validated using face and construct validity. Out of these 30 items, only 18 items (9 positive and 9 negative statements) survived the validation exercise. The 18 items represented statements about biology on four-point likert type scale with options from strongly agree (SA), Agree (A), disagree (D) and strongly Disagree (SD) on which students indicated their agreement or disagreement levels. The scoring of the items based on the scale are as follows:

- Strongly Agree = 4
- Agree = 3
- Disagree = 2
- Strongly Disagree = 1

The face validity was done by 2 experts in measurement and evaluation as well as 3 experts in biology education of Enugu State University of Science and Technology, Enugu.

The reliability of SATB was determined using the measure of internal consistency. The scores of 414 students used for the trial test were applied in Cronhach alpha formula. The internal consistency coefficient of SATB was computed to be 0.83.

The Cronbach alpha is a modification of K – R 20 formula meant to be used for multiply scored instrument such as attitude scale. The use of Cronbach alpha in this circumstance is thus justified.

The researcher administered the SATB to the 640 SS 2 biology students in the secondary schools in Enugu East Local Government area using three trained assistance researchers.

The research question was answered using mean and standard deviation. Multiple classification analysis of covariance (MANCOVA) as recommended by Gay (1981) was used to test the hypothesis. Computer was used for the analysis of the data.

**Results**

**Research Question**

What is the difference in the mean attitude scores of SS II male and female biology students.
**Influence of Gender on Students’ Attitude towards Biology in Enugu East Local**

**Table 2**  
Mean and standard deviation of the student scores on their attitude toward biology.

<table>
<thead>
<tr>
<th></th>
<th>No of respondents</th>
<th>Mean</th>
<th>Standard deviation (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude of females</td>
<td>270</td>
<td>58.49</td>
<td>19.81</td>
</tr>
<tr>
<td>Attitude of males</td>
<td>207</td>
<td>54.75</td>
<td>23.65</td>
</tr>
<tr>
<td>TOTAL Average</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data in table one above showed that the female attitude of 58.49 and standard deviation of 23.65 seem to have better attitude towards Biology than males with mean of 54.75 and standard deviation of 19.81. This showed that males and females seemed not to demonstrate the same pattern of attitude towards Biology. However the difference between their attitudinal dispositions toward biology appeared to be slight.

**Hypothesis**

There is no significant different in the mean attitude of SS II male and female students in Biology.

**Table 3**  
Multiple classification of analysis of covariance (MANCOVA) on male and female SS II Student Attitude.

<table>
<thead>
<tr>
<th>Variables (Gender)</th>
<th>Number</th>
<th>Unadjusted deviation</th>
<th>Adjusted deviation</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>426</td>
<td>-42</td>
<td>-24</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>213</td>
<td>-52</td>
<td>-29</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Table 2 revealed that there is no significant difference due to gender at 0.05 on attitude of students towards Biology. The observed F-ratio was 0.02 as against the critical F-value of 3.86 with 1 and 139 df at 0.05 level of significance. This meant that gender does not exert any significant influence on the attitude of students toward Biology. Therefore, the researcher failed to reject the null hypothesis.

**Discussion of Results**

The table one above showed that the male and female SS II students seemed not to demonstrate the same pattern of attitude toward Biology. The difference was found not to be significant and so should probably be ignored. This means that gender is not important factor in determining students’ attitude towards Biology in senior secondary schools.
Similarly, study carried out by Jacobwitz (1983) showed that there was no significant difference in the mean scores of the sexes in mathematics and biology achievement. Contrary, Jegede and Oyebanyi (1995) reported that gender imbalance in biology (science) has been found to account for negative attitude of girls in (science) biology and technology. They identified six factors (individual, cognitive, home and family, educational, socio-cultural and attitudinal factors) as responsible for gender imbalance and negative attitude of girls towards (science) biology.

Recommendations
The following recommendations were made based on the results of the study:
1. Professional bodies and government should organize workshops, seminars and short courses whereby well informed science educators will be educated on the need for gender balance in choice of science subjects.
2. Biology teachers should endeavour to boost positive attitude to both male and female students while teaching (science) biology in schools.

References


AN APPRAISAL OF POVERTY ALLEVIATION PROGRAMMES IN NIGERIA

E.O. Abah; Iorkua Mtoo; Philip Agah and A.T. Zever

Abstract
Studies have shown that earlier programmes aimed at poverty alleviation such as Better Life Programme (BLP)/Family Support Programme (FSP), Directorate of Foods, Roads and Rural Infrastructure (DFFRI), the National directorate of Employment (NDE), the People’s Bank of Nigeria (PBN), Community Banking Scheme, Mass Transit Programme, Petroleum (special) Trust Fund (PTF), etc. all failed, not as a result of poor conception but on account of haphazard, non-focused and blurred implementation process. In some cases, the entire programme was hijacked by buccaneers within the corridors of power. The end result has always been a dismissal performance of such programmes. The major thrust of this paper is to seek to examine the various policies aimed at poverty alleviation, their cause and effects and proffer recommendations that may help to arrest this phenomenon.

Introduction
The last decade has been a particularly harsh period for many low-income developing countries. World recession, the debt crisis, exchange rate misalignments, oil price shocks, depressed commodity prices, high level interest rates and stagnation in foreign aid flows have all exerted in their own ways, a heavy toll on developing countries and their people. The economic and invariable the social services sector growth of these countries has been negligible if not negative during this decade.

The poor have been particularly ‘hard hit’ by these macro-economic and external problems, as a result of deterioration in real wages, increase unemployment and cut-back in social sector sending. In essence, the poverty situation of the countries has worsened.

Nigeria, though part of this global community and blessed with enormous human, material and mineral resources, is still ranked low in the ladder as the 7th poorest country in the world. All known indices of underdevelopment: high infant mortality, extremely poor medical facilities, very low per capital income, none functional social facilities and corruption, etc. are prevalent in the Nigerian socio-economic system.

The resultant effect of the above scenario is a ridiculously low and depleted standard of living and mass poverty amongst the populace. This situation has always been of immense concern to successive Nigerian governments. Attempts have been made in the past to address this worrisome
state of affair and all such attempts delivered no significant dividend to the target beneficiaries of the programmes.

**Conceptual Clarification**

The concept of absolute poverty firstly connotes a standard of living below the minimum needed for maintenance of life and health. Secondly, relative poverty is a condition characterized by a scarcity rather than a lack of economic necessities. A relatively poverty-stricken person is poor in comparison with a majority of others in his society, but his level of living usually does not constitute an immediate threat to life or health. Thirdly, poverty is also conceived as an existential condition in which an individual lacks the skills to sustain a living above poverty line. Thus, the pivot of the programme is to guarantee a sustainable level of technical and financial assistance for millions of people to remain in productive employment. It is therefore desired, that the multi-pronged approach to the poverty epidemic is appropriate.

Poverty is multi-faceted, exposure to risk, insufficient access to social and economic service and few opportunities for income generation. Edward Jaycox, the vice president African region of the world Bank, did say that: “over 200 million Africans today live in wrenching poverty”, and that “if the present trends continue, their number could be more than double over the next twenty years, and making sure that this does not happen is the overarching objective of the world Bank and the international community in Africa.”

Given its multi-dimensional nature; poverty has been perceived using different criteria. The central Bank of Nigeria/World Bank defined poverty thus:

“poverty may be seen as a reflection of glaring defects in the economy as evidenced in mass penury, pauperization of the working and professional class including artisans, mass unemployment and poor welfare services. It denotes absence or lack of basic necessities of life including material wealth, common place regular flow of wages and income and inability to sustain oneself based on existing resources available.” In such a state, the means of achieving minimum subsistence, health, education and comfort are absent. That is why Grenwald and association defined poverty as a “condition in which income is insufficient to meet subsistence needs.”3 in the same vein, Harry Johnson defined poverty as a “situation when the resources of individuals or families are inadequate to provide a socially acceptable standard of living.

Sometimes, attention is drawn to the relative nature of poverty and a clear distinction is drawn between the poor and non-poor. According to the World Bank Development Report (WDR), poverty is defined as “inability of certain persons to attain a minimum standard of living.
Table 1: Nigeria Trend in Poverty Level (1980-1986)

<table>
<thead>
<tr>
<th>Year</th>
<th>Poverty Level</th>
<th>Estimated Total Population</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>28.1%</td>
<td>65m</td>
<td>17.7m</td>
</tr>
<tr>
<td>1985</td>
<td>46.5%</td>
<td>75m</td>
<td>34.7m</td>
</tr>
<tr>
<td>1992</td>
<td>42.7%</td>
<td>91.5m</td>
<td>39.2m</td>
</tr>
<tr>
<td>1996</td>
<td>65.6%</td>
<td>102.3m</td>
<td>67.1m</td>
</tr>
</tbody>
</table>

Source: Federal office of Statistics (FOS), National Census Survey.

Ethnic minorities, who are marginalized, deprived and persecuted Economically, Socially, Culturally and Politically.

In the main, poverty manifests itself in different forms depending on the nature and extent of human deprivation. When the minimum level of consumption to sustain human existence becomes important in distinguishing the poor from the non-poor, the unemployed and low-income earners come readily as the stratum of poor households.

According to the bulletin on the guidelines for the implementation of the poverty alleviation program of the Federal Government of Nigeria, it sees poverty has very pervasive in Nigeria. About 60% of Nigerians live below the poverty line. Data on poverty are staggering and reveals that only 50% of the population have access to safe water. About 38% of the population do not have access to primary health care while most Nigerians consume less than 1/3 of the minimum required protein and vitamins intake due to low purchasing power.

As a result of the pervasive nature of poverty, most governments have focused as a major objective of the reduction of poverty, which is seen, has a panacea to economic development. However, it is to be noted that alleviating poverty is not a precondition to economic growth, this is because, alleviating or reducing poverty requires a broad-based strategy that should address poverty both as an economic and as a social phenomenon. It is in line with this notion, that the “collaborative strategy of both the World Bank and the United Nations Children’s Fund (UNICEF) in conjunction with other members of the international community in the on-going poverty Assessment and alleviation programme Development in Nigeria, which is being coordinated by the National Planning Commission with substantial data and ‘input’ from the Federal Office of Statistics (FOS).

The conception/perception of poverty has therefore, broadened the focus beyond the ability of households to provide food for its members to include its ability to access other basic social amenities which impact positively on family welfare. Against this backdrop, Eglama and Bamidele in 1997 aptly summarized the definition of poverty in both absolute and relative terms as “a state of where an individual is unable to cater adequately for his/her basic needs of food, clothing and shelter; unable to meet social and economic obligations; lack gainful employment, skills, assets and self-esteem; and has limited access to social and
economic infrastructure such as education, health, portable water and sanitation, and as a result has limited chance of advancing his/her welfare to the limit of his/her capabilities,“

**Origin of Poverty in Nigeria**

From our discussion so far, it is clear that the phenomenon of poverty is not new in Nigeria. Even before independence, majority of Nigerians lived below the poverty line. Although the country was self sufficient in its food production at the time, its citizens had a low per capita income and lacked basic infrastructure and social service. In other words, apart from food production, Nigeria was deficient in all other areas that were the main indicators of poverty. In general, there was a high rate of infant mortality, a low life expectancy, low educational opportunities, poor water, inadequate health-care and unfit housing. Furthermore, Nigerians were not actively involved in the decision-making process during the colonial era.

With the advent of independence in 1960, Nigeria remained largely agrarian community with most of its populace being engaged in Agriculture. Agriculture also contributed over 65 percent of the Nation’s Gross Domestic product. Despite independence, there were no significant improvements in the standard of living of most Nigerians. The problems of inadequate health care, low life expectancy, low educational opportunities, and high infant mortality rate, among others continue to thrive.

The oil boom of the 1970s however, marked a new beginning for Nigeria. The windfall oil income first led to large budget surpluses. This, however, quickly gave way to large budget deficits as government rapidly increased its expenditure. Unfortunately, the government directed its spending to the cities rather than the countryside. Most Agricultural spending went to large-sale capital-intensive projects. Most of these projects had low rate of return. Very little investments went to the rural areas, which was home to most subsistence farmers that were responsible for food sufficiency in pre-oil boom Nigeria.

The oil windfall was further drained by prestige projects and/or those with low returns. These include the constitution of a new capital city, an integrated iron and steel industry (Ajaokuta) and the hosting of FESTAC. In the main, government encouraged consumption through the award of very liberal compensation and remuneration packages. In some cases like during the Udoji Award, very generous, but indefensible arrears were paid to the government workers. Government spending pattern also led to the neglect of subsistence Agriculture, and productivity in this sector rapidly declined. The result was that the country soon became a net food importer.
Government Attempts at Alleviating Poverty in Nigeria.

Nigeria has never fallen short of attempts at alleviating poverty. Previous governments devised several schemes to alleviate poverty in the land but virtually in all cases, the attempts fell short of expectation. In 1986, for instance, General Ibrahim Babangida, former Military president, established the National Directorate of Employment (NDE), to promote skill acquisition and self-employment. But the project was a monumental failure to achieve the set objectives due to inadequate funding and corruption on the part of its officials.

Other poverty alleviation related programmes introduced by past regimes include: Better Life for Rural Women Programmes, Family Economic Advancement programme (FEAP), Rural Banking Scheme, community banking scheme, National Economic Reconstruction Fund (NERFUND), the Nigeria Agricultural Land Development Authority (NALDA), the Federal Agricultural coordinating Unit (FACU), the peoples bank, the Agricultural projects Monitoring and Evaluation unit (APMEU), The Department of rural development of the Agricultural ministry and the National Commission for mass literacy, Adult and non-formal Education and the Directorate for Food, Roads and Rural Infrastructure (DEFRRRI). These organisations were all rationalized by the present regime to form a National Poverty Eradication Commission (NPEC).

Despite the efforts of past leaders, there has been very little progress in the area of alleviating poverty in Nigeria. Not surprisingly, president Obasanjo has made poverty alleviation one of the main goals of his administration. In his maiden full budget speech (2000), he explicitly stated that one of the major issues that this administration has undertaken to resolve is the lingering poverty that has stricken our people along the length and breadth of the nation. The extent of poverty has reached frightening proportions primarily due to the neglect of Past governments. This is a plague that we must jointly address and together we must try to conquer it. To achieve this objective, the government established a high Powered poverty alleviation council headed by the president himself. To further help reduce poverty, the government has also approved “a vastly improved micro credit scheme for the provision of loans and services to farmers and other producers in the informal sectors.” Furthermore, the government also decided to set up a small industries development Agency.

The above programmes are, in the main, being funded by the international monetary fund (IMF), which has established a donor funded poverty reduction fund of 1 billion dollars. The strategy, according to the president, for spending the funds, will be to empower our citizens in both the rural and urban areas to produce, with a view to improving their quality of life. This empowerment will come in the form of the provision of the necessary socio-Infrastructural tools that will make this transformation happen. If we can increase the disposal income of all concerned through real production by an average of
10-15 percent annually over the next ten years. Then, we can as policy makers claim success. And we cannot afford to fail.

In other words, government will, in the main focus on social and infrastructural facilities, which are instrumental to increased productivity. It was also hoped that the multiplier effect will result in the creation of at least 200,000 jobs in the country. A minimum of 5,000 jobs is expected to be created in each state of the federation.

Thus far, we have seen very little of the promised social and infrastructural improvements. Jobs have no doubt been created. The methods of such jobs creation is however, most undesirable. In its pursuit of its targeted jobs creation levels, government has simply made available money for the payment of salaries to people employed under this scheme without being clear what the people are suppose to do. To a very large extent, this has turned into a scam for rewarding political party stalwarts active during elections.

Problems of Previous Poverty Alleviation Schemes

Despite the numerous poverty alleviation schemes introduced in Nigeria, poverty alleviation still remains an issue. There is widespread agreement that the previous schemes have failed to achieve their objectives. In general, most of the schemes have failed for reasons that include inadequate stake-holding by beneficiaries and operators and corruption.

Corruption

It is no exaggeration to say that the level of corruption in Nigeria is indescribable. Corruption is so endemic in Nigeria that the country is currently classified, by transparency international, as the most corrupt in the world. So endemic is the corruption that it seems to be the only growth industry in Nigeria. According to Christopher Kolade, whom president Obasanjo appointed to probe contracts awarded under General Abdul-salami Abubakar, it is not viable to punish all corrupt government officials. Sacking every corrupt government official will mean sacking virtually the entire government workforce. Such level and degree of corruption has led to questions being asked as to whether Nigerians really do understand the implications for its development. According to a former head of state:

> Our economic dilemma is compounded by corruption and other Aspects of social indiscipline, which are widespread in our society. Unfortunately, there seems to be little awareness of the dangers Posed to our future by these problems even amongst the elites.14

An economist newsmagazine has also appropriately described the Cost of corruption to Nigeria thus:
Nigeria has received some $280 billion in oil revenue since the Early 1970s. Through foolish investments, graft and simple theft, this vast fortune has been wholly squandered. In fact, because successive Nigerian governments borrowed billions against future Oil revenues and wasted that money too. It is fair to say that Nigeria blew more than its entire oil windfall. Nigerians are on average poorest today that they were in 1974. Despite the recent surge in the oil price, the country is saddled with debts of about $30 billion. Income per head in 1998 was a wretched $345 less than a third of its volume at the height of the boom in 1980.15

In the main, poverty and graft has been a major issue in the failure of most of the previous poverty alleviation schemes established by the government. Most of the government appointed managers and custodians of these funds see their appointment, simply as an opportunity to get their fair share of the national cake. A formal chairman of the people’s bank, for instance, once said the following about his colleagues on the board: most members of the task force were selfish and greedy. I found out some of them would do anything. Just anything, to get money. It was always give me money, money, money…. Some of the task force members were, with due respect, very lousy people. At a point, the task force could not even hold meetings, because every meeting would degenerate into a shouting match, a raw fight…. In most cases, I would order that all the doors and windows be shut to prevent our rowdiness from being heard on the streets. People will be howling and snarling at one another like dogs.

Such an attitude is in no way limited to the people’s bank or indeed other government organisations. It is deeply embedded in the social fabric of the nation and most Nigerians either see nothing wrong with it or are quite happy to tolerate it. According to a CBN publication:

An average Nigerian looks upon government to provide him with all the essentials of life in return for little or no contribution to the economy. In the same vein, the functionaries of government, being Nigerians themselves, display this trait. Against this background, most top government functionaries at the federal, state or local Government levels scramble endlessly to grab anything Governmental. Ironically, these grabbers are treated as heroes by their communities. Consequently, they are honoured with all sorts of traditional and chieftaincy titles by various Nigerian Communities with the hope of getting their own share of the booty….. the issue becomes more complicated when the poor whose welfare is worsened must by this Development not only hold such beneficiaries in high esteem but look to the day when they too will benefit.17

Another reason for the failure of previous poverty alleviation scheme has been the lack of appropriate infrastructure.
Lack of Adequate Infrastructure

In Nigerian today, only 60 percent of its inhabitants have access to portable water. Furthermore, there is dearth of motor able roads, electricity and especially in the rural areas. Even in the urban areas, the position is no different. Power supply, water supply, and indeed most other infrastructural services, which are usually provided by the government, are at best epileptic. Most businesses and indeed individuals, in these urban areas, see it as a necessity to develop their own infrastructure, which runs parallel to that provided by the government. This situation has been aptly described thus:

Firms wanting to set up in Nigeria are faced with a problem known locally as “BYOI” (bring your own infrastructure). Cadbury Nigeria, for instance, in the absence of reliable power of water Supplies, generates eight megawatts of its own electricity and drills 25,000 feet down to obtain the 70,000 gallons of water an hour it Needs for its Lagos food processing plant…. BYOI adds at least 25% to the operating costs.18.

Such expenses clearly add to the cost of doing business in Nigeria. Lack of infrastructure can also greatly reduce the efficiency of labour and productivity. By extension, properly functioning infrastructure will greatly enhance the productivity of the average worker, increase the capacity utilization of our industries and make them more internationally competitive. Such scenario will in no doubt lead to the creation of more jobs which is a fundamental pillar in the poverty alleviation programme, at least as defined by the Obasanjo government. More over, most small-scale enterprises simply do not have the financial muscle of such erratic infrastructural services is, therefore, even more devastating to such enterprises. Another hindrance to previous poverty alleviation schemes in Nigeria is the level and quality of education in Nigeria.

Education

There is evidence of some co-relationship between education and poverty in Nigeria. A 1990 study by the World Bank shows that the educated in Nigeria fare better than the uneducated. In the same vein, the study suggests that the completion of primary education makes a big difference between being poor and not being poor. The report for instance, claims that attending primary school reduces the probability of being poor by almost 50 percent. Attending secondary school further reduces this probability by another 20 percent. If this theory is true, it follows that more and more Nigerians should now be existing above the poverty line especially given the mass literacy campaign and the attendant increasing literacy levels of the 1970s and 1980s. For instance, primary school environment ratio for males in Nigeria rose from 54 percent in 1960 100 percent in 1990. The corresponding ratio for females also rose from 31 percent in 1960...
An Appraisal of Poverty Alleviation Programmes in Nigeria

79 percent in 1990. Contrary to the above expectations, more and more Nigerians now exist below the poverty line. It could also mean that education is useful only when it is qualitative.

On the issue of quality of education in Nigeria, it will not be an exaggeration to say that the standard of education in this country has been dropping at an alarming rate. Incessant strikes, non payment of teacher’s salaries, corruption and the general decay in the value system of the country has extensively reduced the value of most of our educational qualifications. Persons trained in such an educational system are less likely to acquire the requisite skill and discipline necessary for development.

The standard of education in rural communities, without basic infrastructure is even bound to be worse. Communities without electricity, water and access roads, are most unattractive to such teachers. Teachers posted to such communities are therefore more likely to resist their posting thorough various overt and covert means. In practice, however, I have personally observed communities that try to make their place more attractive to teachers. Such communities, for instance, sometimes provide, staff houses, supplementary pay and domestic assistance.

The point, however, is that all things being equal, schools situated in localities with some basic infrastructure are more likely to be attractive to teachers than those situated in localities where there are no such infrastructure. The provision of basic infrastructure will also help reduce and in fact, may reverse the rural-urban migration trend with good roads, portable water, telephone services and electricity, some people (and business) may opt to relocate to the rural areas and benefit from lower cost of living, lower pollution level and the beauty of nature. Such movements are bound to impact on the quality of education in such rural communities.

Conclusion

One is tempted to conclude that though poverty still gnaws at the very existence of the Nigerian state, there is definitely need for a well articulated and targeted poverty alleviation initiative to significantly reduce the miserable living conditions of the poor. Such initiative should take cognizance of the imperatives of growth, development of human capital, basic needs and social services and good public service management.

Recommendations

Against the background of existing poverty alleviation programmes, the success of which has been largely limited, the paper made the following recommendations:

1. That Nigeria should integrate into the increasing economic globalization with improved infrastructure and friendly macro-economic policy environment.
2. A well articulated poverty eradication policies with focused institutional arrangement and well coordinated programmes implementation strategies, monitoring and evaluation will result in good quality of life for the people.

3. Existing poverty alleviation institutions should be strengthened rather than establishing new ones.

4. Political stability should be ensured through a democratic system which should provide good governance.

5. Infrastructural facilities should be rehabilitated and expanded.

References


Ibid.


Ibid. pp. 4-5.


An Appraisal of Poverty Alleviation Programmes in Nigeria


O. Ajakaiye, Conceptualization of poverty in Nigeria in Central Bank of Nigeria (Ed), proceedings of the seventh annual conference of the Zonal Research Units (Makurdi, 8th – 12th, June, 1998), p. 84.

VITALISM, COMMUNITY AND HUMAN EXISTENCE IN AFRICA

Dr. Michael Chukwemeka Ozumba

Abstract

There have been claims and counter claims on the points of divergence between the road to evolution followed by the African and that followed by his counterpart from the Western world. While most thinkers try to identify this divergence with the trans-Atlantic slave trade and its concomitant dehumanization of the African, the thrust of my paper is to show as far as I can that the fundamental difference centers on the Africans sense of community and communal relations. Unlike the Westerner to whom life is atomistic, the African exists and is relevant only within the context of his society. This sense of identity and solidarity with the society is the fons et culmen of the African being and time.

Conceptual Clarifications

Vitalism is from the Latin etymol: ‘vita aeum’ meaning life. Life is the opposite of death; it is the quality of that which vital activity is still operational. Man has an ontological existence while the lower animals enjoy mere ontic existence. This could have informed M.Heidegger’s assertion that man exists while the lower creatures simply are. At the core of vitalism is the conception that God/Chineke is the author and source of all lives including human life. Borrowing from Aristotle (384-322BCE) He (Chineke) is the ‘terminus a quo’ as well as the ‘terminus ad quem’ of our existence. He is a ‘causa sui’ as well as the ‘first cause’ and the ‘final cause’ of one’s being. This view is the opposite of mechanism.

The African is created and thrown into the world by Chineke. Being thrown without consultation, he has to seek how to exist, and how to realize himself in being. In this search and choice, the Igbo-Africa exists in the community. The community in question is amorphous and not atomistic. Hence Okolo, B considers mmadu as a ‘being-with or a being-in-relation-to-others’. He can only realize himself in and through his community thereby creating what a Spanish phrase calls clan vital. Onwubiko O. (1991, p.14) says:

The clan here is clan vital—“a living clan” (A living clan is better understood as its explanation—a community where real life is assured, where one can suffer neither social nor cultural alienation. It is a clan that is a live because life in it is human and humane. In another sense, the community offers the African the psychological and ultimate security as it gives its members both physical and ideological identity’.

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JPC Nzomiwu(1977) says that there is an ontological relationship existing between the members of the community because they share common ancestral descents. His words are:

The Igbo community denotes first and foremost ontological quality of human relations. It is ontological insofar as all the members of the community are believed to descend from a common ancestor. Every man is linked to his parents on the natural level. He receives life from them, depends on them to grow up. His parents in turn are bound to their grand parents etc. This link which binds all the members of the same family by propagation is broadened to include all members of the community or clan who are believed to be descendants of the same ancestor. Every one considers himself a member of a definite community and as part of the whole.2

This sense of the community influences all facets of the Igbo-African life be it religious, political, social or economic. On this note Iroegu P.(1966) says that “land for instance is held in common at village, and at times at clan levels. Cult deities are also common. Both factors depict a common destiny”.3 As already mentioned, the community is in no way atomistic. The members are united by a common ancestor, common deity, common customs and common way of surviving economically. Therefore it has been observed by Iroegbu P.(1996) that ‘the village is not mere collectivity of persons, but an enlarged extended family of the same ancestry.’4

A close communal link between different large families (constitute the kindred), and different kindred of the same ancestry make up (the village). Different villages in turn of the same ancestry make up (the town), and different towns of the same ancestry which forms the clan. This containing ancestral union accounts in part for the strong community spirit among the Igbo. Generally called Igbo communalism.4

This common ancestry is a strong tie that unites and unifies the Igbo world. These ancestors are believed to be concerned with the daily activities of the living. They are also contacted as intercessors before the highest God/Chukwu/Chineke. Onwubiko O (1991) puts it this way:

The Igbo-African emphasizes community life and communalism as a living principle of which the basic ideology is community-identity. Its aim is to produce and present an individual as a community- property and therefore must be community-protected.5

Such culture that “must be community protected” includes being ones brother’s keeper and accepting “individual responsibility within a communal ownership and relationship”. An illustration of this is seen in the altruistic help, which Nwakibie rendered to Okonkwo, the protagonist in Achebe’s Things Fall Apart. Biko S. (1975) puts it this way:
Poverty was a foreign concept. This could be brought to the entire community by an adverse climate during a particular season. It never was considered repugnant to ask one’s neighbour for help if one was struggling. In almost all instances, there was help between individuals. Tribe, chief and chief etc even in spite of war.\(^6\)

The sense of community among the Igbos includes free and equal participation of all members in the social, religious and political functions held at the Village Square or in the market square. Thus Uchendu V. (1965) avers that:

\[\text{Community spirit is very strong among the Igbos. Almost from the first start, the individual is aware of his dependence on his kin group and his community. He also realizes the necessity of making his own contribution to the group to which he owes so much. He seldom, if ever becomes really detached from the group wherever he may live.}\(^7\)

The reason for the emphasis is to establish that though the Igbo-African is because he belongs to community such that he cannot opt out of his community for ever, his individualism and singularity is assured. Iroegbu P. (1996) further maintains that “his adherence to the community is constructive, not passive and blind”.\(^8\) He depends on the community, is right or wrong only with the context of his community, yet he is autonomous. This is why the Igbo give such names as Afamefuna (may my name never go into extinction) to his children. It is also common to hear the Igbo-African say “Onye na nke ya (every person on his own). They also say “Uche bu akpa, onye o bula nya nke ya. (Wisdom is like goatskin bag, everyone carries his own). This individualism of the Igbo does not contradict his sense of community. Njaka in Iroegbu P. (1996) summarizes what has just been stated thus: The individual claims an extra ordinary autonomy within the society and it is his belonging to the community that helps him to develop his potential, his initiative and-drive for achievement, his originality and his ability to ward off inordinate self – ambitions which could remove him from the society’s communion. His union within the community of persons gives him pride, boldness and individualism.\(^9\)

Iroegbu P. (1996) expatiates more on this sense of autonomy. He says:

\[\text{In autonomy the individual is free though relatively. Autonomy is a form of creative critical freedom possessed by the members of the community, which makes for the particularity and distinctness of the individuals. Yet, it does not turn them into atoms.}\(^{10}\)
Commenting yet on individualism but with reference to palm-nut products” or British and American trained elites who imbibed the western brand of individualism, Prof. Ayandele E. (1974) writes:

The individualism of the educated elite would have been good thing were it not a jarring one. Unlike the indigenous society where individualism was healthy in the sense that it integrated the individual in the corporate unity, the individualism of the educated elite made the society they were creating ever more atomistic. Theirs was a community of individuals that never succeeded in nucleating into small groups, how much less evolve into one single society with corporate attributes.11

This is because of the fact that these elites retrained in the Western culture in opposition to their indigenous customs. Their education was in most cases community – sponsored. Hence the appellation “palm nut products”. Nevertheless, they disappointed their people. Onwubiko O. (1991) observes that “they ostracized themselves from their very communities and thereby killed the community spirit.”12

CoutonW (1966) while leaving in search of the Golden Fleece received this advice from his father:

…Then my father went on to remind me that I had now started to climb a palm tree which was high and difficult to climb; that many were watching my progress, and many ripe fruit was awaiting me on the successful conclusion of my climb. He ended with a warning that if I failed to reach the top, those watching me, both living and dead, would curse me for failing them. On the other hand, if I reached the top in order simply to gorge myself with fruit I would surely become sick and fall to the ground and die. But if I returned to my people to share with them the fruit of my labour, then all would sing to my praise and thank me and honour those who brought me to life.13

This is the authentic spirit of the Igbo-African sense of the community. Writing on this sense of community, Maurier H. in Iroegbu P.(1996) says “relation is constituent of the human person, without it, the human person is isolated, and falls into nothingness.”14

From what has been said so far, the following points could be deduced:

The Cartesian Cogito ergo sum, the Kantian transcendental noumena, and the Rawlsian veil of Ignorance are alien to African thought categories which are most concrete, existential, and practical. Relatedness as defining (in part) a person is not an abstraction. It is a vecu.15
Maurier H in Iroegbu P. (1996) therefore concludes:

*The analyses (abstraction and confrontation of subjects) do not tally with African experience. A form of thought fundamentally relational is prevalent in this empire... presence is less an affair of consciousness than of life.*

Referring to the prevalence of this sense of community among the Igbo-Africans, Achebe C. (1999) Sept 4\(^{th}\), Odenigbo lecture series says:

*ihe Kwuru, ihe akwudebe ya. Oso ya ya buru Soso ihe onu o yi n onu.
Nke a kpatara na mgbe a huru ihe ojoo ahubeghi na mbu; ndi Igbo na-ası na nkea bu ajo ihe n’ onu oto.*

Iroegbu P. argues that right from conception, the Igbo child enjoys a community. First is the community of its mother, then the community of the midwives, then the smaller group that comes around to welcome it into the world. Finally is the wider world in which and within which he lives and interacts. He therefore enumerates the following seven items as the constituents of the community. They are: common origin, common world-view, common language, shared culture, race, colour and habits, common historical experience and common destiny. Expiating on this, Nwala T. (1985) comments:

*The community itself has its being or existence defined by this common blood. The life of a member of the community is interwoven with the others through the common blood, which they share and through the web of economic and social interdependence, which practically exists in the community.*

Thus, human existence in the Igbo-African world is only understood within the context of the community. Mbiti J. (1971) summarizes this when he says, “I am because we are and since we are, therefore I am.” Human existence is real only within the community, which is ubiquitous. This is why the Alozi proverb says “go the way others go. If you go alone, you will have reasons to lament”.

Iroegbu, P. (1995) himself an Igbo-African summarizes the Igbo-African sense of human existence as being-with in these words:

*That community-consciousness resounded to constitute the backdrop of a person’s realization of his consciousness as a person, distinct, but already immersed in one’s community.
At the level of personal or self-identity, the story is similar. My identity is partly constituted by the community. What I am is partly what the community has made of me. I do not have the definition of self pre- alably, apriori or outside community ties, obligations, care, love, rules and custom and tradition.*
This runs counter to the Western metaphysics of personality, where personhood is defined by “distinctness of the individual to the self”. Menkiti, I. (    ) argues that “it is the community which defines the person as person, not some isolated static quality of rationality, will or memory”.

I shall conclude our discussion on Vitalism, Community and Human Existence by citing Abanuka B. (1995) who says:

*The community is the place for concrete relationships: through his roles and expectations in the community, the individual comes to a deeper self-understanding-first, he comes to grasp that inasmuch as he is a member of the community, he cannot live and act in disregard of the community’s customs, laws and traditions. For it is these customs, laws and traditions which constitute the primary moral consciousness which informs customary conscience.*

The community therefore is the custodian of the people’s morality and is the only context within which life is human and reasonable in the Igbo-African world. Unfortunately people have through cross cultural contacts and imbibing of Western education with its concomitant exocentric attitude towards whatever that is African lost this African sense of community and communal relations. This to me is the beginning of the loss of identity and values that glare the African face today. That is where the rain began to beat us in the African world because no body can permanently severe from his roots and no one can bury his past forever.

**References**


Vitalism, Community and Human Existence in Africa


ACQUISITION AND LEARNING OF LANGUAGE SKILLS FOR COMMUNICATIVE COMPETENCE

C. O. Ajewole-Orimogunje

Abstract

This paper discusses the relevance of the knowledge of the basic language skills- Listening, speaking, Reading and Writing to an individual. Language is an important means of communication in the society as well as a medium through which we acquire knowledge. Listening and Reading are referred to as receptive skills while Speaking and Writing are productive skills. The paper is concerned with how these skills, with reference to English Language can be useful for the development of communicative competence of an individual. The paper concludes that the basic language skills are essential for all round development of an individual. It also recommends that language skills should be emphasised and taught in Nigerian schools for mutual intelligibility.

Introduction

Language is human speech, either spoken or written. It is the most common system of communication which allows people to interact with one another and to write their thought and ideas. Whenever there is human society there is language. Language has made possible the development of advanced, technological civilisation. Without language for communication, there would be little or no science, religion, commerce, government, art, literature and philosophy (The World Book Encyclopaedia, Vol. 12 p. 49).

According to Hargie (1997:56), there are linguistic variations associated with social situations with some requiring a higher degree of language formality than others. He observes further that giving a lecture, being interviewed on television or chairing a committee meeting usually involve a more formal, deliberate, elaborate use of language than for example, having a chat with a friend. It should be noted that changes in tone, pitch and volume of voice occur according to the context and situation of language use. The use of language varies according to the context of situation.

Human beings are naturally endowed with language acquisition device which makes it possible for them to learn a language. All normal humans bring into the world an innate faculty for language acquisition and language use. It has been shown that children learn the language of those who bring them up from infancy; one’s first language is acquired from the environment.

Language Skills

There are four language skills- listening, speaking, reading and writing. The knowledge of these basic language skills are essential and relevant to the
development of an individual and to the socio-economic and political stability in Nigeria. Language has a major role to play in development as no meaningful development can take place without language. Also language plays an important role in intellectual development of a person. The table below, developed by Unoh and cited by Jiboku (2002:197) affirms this.

<table>
<thead>
<tr>
<th>Education stages</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-primary Education stage (from birth to six years)</td>
<td>Progressive Acquisition Of Basic Language Skills. Development of Reading / Learning Readiness and Cognitive awareness</td>
</tr>
<tr>
<td>Primary education stage (from 6-11 years)</td>
<td>Consolidation of basic language skills: Achievement of greater learning readiness and greater cognitive awareness</td>
</tr>
<tr>
<td>Secondary education stage (from 11-17) years</td>
<td>Development of more sophisticated learning skills and strategies. More effective use of language in communication and learning</td>
</tr>
<tr>
<td>Tertiary education stage (18/20 till end of higher education)</td>
<td>Mature learning and communication skills and strategies. Superior cognitive awareness</td>
</tr>
<tr>
<td>Extended/ life – long education stage (from end of certificate centred education till senility or death)</td>
<td>Consolidation and application of mature learning and communication skills, more superior cognitive styles and abilities</td>
</tr>
</tbody>
</table>


As can be clearly seen from the table above, the role of language starts from birth and lasts till death. It is a continuous process that has a lot to do in moulding the life of an individual. Without these skills an individual cannot develop fully intellectually.

The government of Nigeria considers language as important means of promoting social interaction and national cohesion and also for preserving cultures as stated in the National Policy on Education (2004: 5)

**Communicative Competence**

This term was coined by Campbell and Wales to disambiguate Chomsky’s notion of linguistic competence (Adejare 1995: 157). These two authors according to Adejare (1993: 160) define communicative competence as the capability or ability to produce and understand utterances which are not so much grammatical but appropriate in the context in which they are used. In his own views, Alo (2003:116) notes that communicative competence “is concerned with the knowledge and ability which speakers need to possess in order to use language appropriately in communicative situation” He states further that communicative competence in English as a mother tongue is different from
communicative competence in English as a second language (ESL) situation. According to the new Encyclopaedia Britannica (Vol. 22, p. 567)

*The learning of a second language is deliberate activity undertaken when one has already nearly or fully acquired the basic structure and vocabulary of one’s first language. It is only in encountering a second language that one realises how complex language is and how much effort must be devoted to subsequent acquisition. Whereas every normal person masters his mother tongue with unconscious ease, people vary in their ability to learn additional language just as they vary in other intellectual activities.*

Thus it clear that in learning a second language the learner needs to put in a conscious effort in order to achieve the desired goal as learners of English as a second language often encounter difficulties in learning due to interference from their mother tongue.

Canale (1983) proposes four part communicative competence to account for the underlying systems of knowledge and skill required for communication. These are grammatical competence, sociolinguistic competence, discourse competence and strategic competence. Grammatical competence entails the sense of possessing the knowledge and skill required to understand and express accurately the literal meaning of utterance. It is concerned with the mastery of the rules of language at the phonological, semantic, syntactic and morphological levels. Sociolinguistic competence is the ability to judge the appropriateness of utterances to a context, in terms of such factors as the status of participants, purposes of the interaction and norms and conventions of interaction. Discourse competence is the ability to perceive and produce cohesive and coherent text in different genres and discourses, that is, the ability to manipulate language to achieve a specific purpose. Strategic competence is the ability to repair potential breakdowns in communication and to enhance the effectiveness of communication between the source – text producer and target – text receiver. This, according to Ogunsiji (2004:21) is the ability to overcome specific communicative problems through the manipulation of linguistic forms as well as paralinguistic devices.

**The Teaching and Learning of Language Skills**

English which is a second language in Nigeria is learned and used together with the various mother tongues. As pointed out earlier the learning of a second language is a deliberate activity undertaken when one has already nearly or fully acquired the basic structure and vocabulary of one’s first language. The four basic language skills need to be effectively taught in schools so as to enable the learners to gain competence in the use of English Language Ogunsiji (2004:20 rightly posits.
The fact that English is a second language has many pedagogical implications. One of these is that all the four basic language skills should be thoroughly taught so that the learners (or speakers) of English as a second language may lay claim to reasonable degree of mastery of the language for intelligible local, national and international communication purposes.

The above point coheres with Alo’s (2003:115), assertion that a pre-requisite for academic success is a good mastery of basic communicative skills in the language of education.

Listening

Listening is the acquisition, processing and retention of information in the interpersonal context (Bostrom 1997:247). Listening skill is essential in the learning process as the learner has to listen during a lesson to understand fully what the teacher is teaching. According to Ogunsiji (2004:22), listening is a complex language skill which involves hearing, understanding, evaluating and responding. The teaching of listening helps students to listen and to differentiate different sounds. The ability to differentiate between different sounds is important because if a sound is misunderstood or misinterpreted by the hearer, interference will occur and this can lead to a breakdown in communication. Listening can be taught through the use of tape recorder whereby the students listen to a passage recorded on tape. Thereafter the students are asked questions on the passage to test their understanding. Also the students can be engaged in dictation exercise; they can listen to programmes on radio and television to enhance their listening skill and ability.

Anene-Boyle (2004: 115) observes that the possession of efficient listening skills has a lot of advantages such as development of language facility and vocabulary, expression of knowledge, and evaluation of strong and weak points in arguments. Problems of sound discrimination, interpretation, information and stress, shifts in emphasis etc can be easily overcome through the use of audio-visual aids, listening to programmes like debates, news documentaries on the radio and television and through making conscious effort to listen properly.

Speaking

Speech is human communication through the spoken language; it is the primary form of language. Speech is central to the development of an individual and the way the individual is presented and understood by others. Marion (1990:244) argues that less complex syntactic structures are used in speech than in writing as speakers have to express their thoughts as they produce them and in such a way that will be easier for the addressee to process. We can use speech to persuade and to win the support of people.
The teaching of speech is very important especially in a second language situation. Correct pronunciation of English words should be taught and emphasised by teachers so that learners will be able to communicate intelligibly. The fact that English is taught as a second Language in Nigeria brings about the problem of interference as learners often transfer the linguistic features of the first language into the learning of the second language. For example some Yoruba learners of English find it difficult to pronounce some English sounds like /v/, /s/ and /z/. This leads to interference as words may be misunderstood through wrong pronunciation. Examples include pronouncing:

- van /van/ as /fan/
- zoo /zu:/ as /su: /
- thin /θɪn/ as /tin/
- shoe /ʃu:/ as /su: /

The supra–segmentals i.e. stress and intonation need to be emphasised in teaching. A word wrongly stressed will definitely give a wrong meaning to the hearer. English is described as a stress timed language while most African languages are tonal. Hence efforts should be made by the teacher to teach word and sentence stress to enable the students to distinguish between words having the same spelling but different meaning and pronunciation. Such words include for example:

- REfuse (Noun) reFUSE (verb)
- PROtest (Noun) proTEST (verb)
- INcrease (Noun) inCREASE (verb)
- EXport (Noun) exPORT (verb)
- PROject (Noun) proJECT (verb)

The development of good phonological competence in English Language which serves as a major means of communication in Nigeria is essential to the development of effective communication skills.

**Reading**

Reading is the act of getting meaning from written or printed words. It is basic to learning and it is one of the most important skills in everyday life. It provides the key to all kinds of information. It enables us to learn how to do things, to enjoy stories, to discover what others believe, to exercise our imagination and broaden our knowledge. Reading means recognising letters and groups of letters as symbols that stand for particular sounds. The sounds, in turn, form words that express ideas in written or printed form.

Reading is a complex skill which involves the brain, eyes, ears and the nervous system. It involves the encoder – the author, and the decoder – the
reader, who reads to make a meaning out of the material being read. Lado as quoted by Ogunsiji (2004:27) says to read is to grasp language patterns from their written representation. Ogunsiji (ibid) assets that reading is taught for three reasons – school or educational purposes, daily information and recreation.

As a language skill, reading is the process of communication through which most formal learning takes place. It is an important tool of learning in the different levels of educational system. Students’ success in academics can be attached to mastery in reading skills as most information the students need in school is got through reading. The teaching of reading stresses certain skills such as word recognition, vocabulary development and comprehension. There are some reading techniques that students can adopt for effective reading. One of these is Robinson’s SQ3R study skill as cited by Ogunsiyi (2004:29). It involves five steps.

S: Survey: - The reader is advised to look through the whole material before reading. This helps the reader to read with better understanding as it helps the reader to know the level of difficulty of the text and also to establish the purpose.

Q: Question: - The reader formulates some questions in anticipation of the author’s answers.

R: Read: - This means reading the material thoroughly. It may involve reading more than once for better comprehension.

R: Recite: - The reader recites mentally the information gathered from the passage.

R: Review: - This involves the evaluation of the material read.

Reading has a lot of advantages apart from using it for the purpose of learning. It is useful in all professions - law, business, engineering etc and most especially in academics. It serves as a means of entertainment or recreation. One can read for leisure especially literary texts which can help to relieve emotional tension. Reading also enables one to acquire information about one’s environment and the world at large. Information which can be got through newspaper, and magazines are very essential especially in this technological age.

Writing

Writing has both social and personal functions. It has the social function of being able to communicate across time and space. It has the personal, cognitive and reflective functions of organising and structuring one’s ideas; it facilitates certain kinds of thinking and learning (Stubbs 1990: 571). Written language can be re-read at leisure; it also has the advantage of being permanent. However, the arrival of word-processing gives way to a dynamic screen display where written text can be redrafted, edited or deleted with no trace of any change. Stubbs (1990:574) observes that the mere fact that something is written conveys its own message for example, of permanence and authority.
Acquisition and Learning of Language Skills for Communicative Competence

In teaching effective writing, students should be introduced to the use of appropriate punctuation marks, paragraph development, rules of concord, coherence and logicality. Wiredu and Oyeleye (1998:92) assert:

Writing skills are complex and no doubt the most sophisticated of the skills required for language learning. For effective communication, writing skills require the mastery of not only grammatical and rhetorical devices but also for conceptual and judgemental elements. Students need the necessary writing skills for them to be able to communicate effectively through writing.

Wiredu and Oyeleye (ibid) identify the following as the necessary skills for writing:

**Language use:** the ability to write correct and appropriate sentences.

**Mechanical skills:** ability to use correctly those conventions peculiar to written language e.g. spelling and punctuation marks.

**Treatment of content:** ability to think creatively and develop thoughts, excluding irrelevant information.

**Stylistic skills:** ability to manipulate sentences and paragraphs and use language effectively.

**Judgment skills:** ability to write in appropriate manner for particular audience in mind, together with an ability to select, organise and order relevant information.

All these put together will no doubt help a writer to be focused and effective in passing information to the readers. An individual needs to learn the skills of writing in order to meet up the challenges of modern life.

**Conclusion**

The basic language skills are essential for all round development of an individual – social, economic, cultural, physical etc. Hence the teaching of these skills in our schools should be of utmost importance. There is no doubt that the combination of the knowledge of these skills and their mastery can make an individual to gain high level of competence in the usage of English Language.

**Recommendations**

1. **For mutual intelligibility spoken English should be emphasised and taught properly right from the elementary schools.** This is necessary because it becomes almost impossible for children to drop or change pronunciations which they have already mastered. Children always prefer and stick to whatever their teachers say or teach them.

2. **The fact that English language performs a variety of functions in Nigeria makes it a necessity that Language skills be taught in our schools.**
3. English Language teachers should endeavour to involve the student in different activities that cover the language skills so as to develop the students’ communication competence.

References


Acquisition and Learning of Language Skills for Communicative Competence


THE PRAGMATIC APPROACH TO MANAGEMENT OF ORGANIZATIONS IN NIGERIA

Dr. Anthony A. Ijewere

Abstract
This paper examined how managers can effectively manage their organization without stress. The paper x-rayed how stress can be prevented in the organization rather than managing it, because its management may or may not be successful. It is better to prevent its occurrence. Generally, it was observed that managers actually go through stressful conditions while managing the affairs of their organizations. The effects of stress they go through was found to be responsible for low productivity, lack of commitment to work, insubordination, industrial unrest, disloyalty, etc. Based on the above therefore, it is recommended that there should be an effective time management system, an efficient planning system, a good industrial relations harmony and provision of the necessary working materials. The above will promote a healthy work environment where workers will be happy doing their jobs, which in turn will stimulate a stress-free working condition and therefore increased productivity.

Introduction
As the general saying goes, ‘prevention is better than cure’. This statement means it is better to prevent stress than allow it to damage the smooth flow of work in the organization.

It is an obvious fact that managers go through stress in the process of carrying out their daily activities in the office. This type of stress include the challenges of the job, meeting customers demands, coping with industrial unrest, competition from firms producing similar products, long meeting hours, overtime and community hostility etc. this is why managers get fatigued and run down after task performance. Selye (1974) opined that while the body under stress is better equipped to deal with a specific stress or, it becomes less able to respond to several different demands. Hence, quality of productivity and performance per se, get low following barrages of stressful experiences. This could be the reason. Hoagland (1977) see stress as something that has to do with the destabilization of the equilibrium of the body mechanism by external factors (stressors) and the restoration of this equilibrium (homeostasis) effected in stress responses.

The above implies that for managers to manage their organizations efficiently and effectively, they must be ready to avoid those things that causes stress and this is what this paper hopes to achieve.

To accomplish this task, the paper has therefore been sectionalize into six parts. Part one which is the introduction has already been discussed above. Part
two shall examine what stress is about. Part three shall look at the consequences of stress. Part four shall discuss the approaches to executive stress. Part five shall examine how stress can be prevented in the organization part six shall form the concluding part of the paper.

**What is Stress?**

Agulanna (1994) defined stress as being inextricably interwoven with life itself and it ceases a life itself stops.

Hoagland (1977) see stress as something that has to do with the destabilization of the equilibrium of the body mechanism by external factors (stressors) and the restoration of this equilibrium (Homeostasis) effected in stress responses.

McGrath (1970) opined that stress is a perceived substantial imbalance between demand and response capability under conditions where failure to meet demand has important (perceived) consequences. He said further that all living things are in a constant state of dynamic interactions with their environments within the interactions according to him, man tries to modify his environment while his environment actually modifies him and in the process, many experience a level of tension or stress.

Beehr and Newman (1978) see job stress as a condition arising from the interaction of people and their jobs and characterized by changes within people that force them to deviate from normal functioning. This definition implies that job stress occurs as a result of the ways jobs are structured i.e. the extent to which the job provides the worker the opportunity for fulfilling certain psychological needs on the job and from the actions of other people in the work situation.

Generally, the definition above simply that managers really go through stress in the cause of carrying out the affairs of their organizations as indicated by the various authorities.

Since it has now been established that stress have negative effects on managers, it is therefore vital to find solutions to it in order to prevent its occurrence than its management since its prevention is easier to handle than its management.

**Consequences of Executive Stress**

It is imperative to note that executive positions and their environments do not directly cause stress. Stress as a feeling is a consequences of personal attributes and dispositions as they affect the individual’s reactions to personal life experience-threatening and pleasant, negative and positive ones Goldberg and Comstock (1976) posited that these life experience or event’s depending on their frequencies and magnitudes enhance stress and subsequent illness in those
experiencing them. Bruno (1993), sees executives as having similar traits as high level ambition, commitment to work and hard drive for success which matches with behaviour characterization of Friedman and Rosenham (1959; 1954) in medical and stress as Type A personality. This type A is characterized by extreme competitiveness, strong devotion to duty and profession, impatience, time urgency in almost everything including eating, listening and other personal habits, a hurried pace of life and extreme desire to achieve. People in this group are clinically susceptible and prone to heart diseases (Glass, 1977) and sudden death (Kamarck and Jennings, 1991). Thus, Type A characteristics interact with executive roles and functions in the environment.

Another noteworthy assertion is that one cannot say that exposure to stress causes disorders in persons. It is equally difficult to determine the does or levels of stress capable of causing what amount of disorder or personal discomfort. It is clear that exposure to overly high and prolonged levels of distress is bound to affect the physiology and biochemistry of the body, hence the immune system, blood pressure flow and cardiovascular rhythms (Nweze, 1994).

**Approaches to Executive Stress Depletion of Body’s Energy**

Stress makes enormous demand on human physical energy resources which the body mobilizes to wade through the imposed demands of the events or situation. Complex tasks performance demands much energy utilization. This explains why one is fatigued and run down after task performance. Selye (2002), opined that while the body under stress is better equipped to deal with a specific stress or, it becomes less able to respond to several different demands. Hence quality of productivity and performance per se, get low following barrages of stressful experiences. There exist the danger of proneness to injuries and accidents. The frequency of mistakes and impaired judgment are consequences of stress.

**Over-Action and Depletion of Immune System**

Uncontrolled and prolonged stress is known for activation of body system: increase of blood pressure, over secretion of body fluids that leads to their eventual depletion (Hubert, 1994). The consequences tend towards degenerative diseases conditions- chronic hypertension, heart disease, stroke, liver and kidney failure and sudden death in both young and old executives. Other associated diseases are psychosomatic complaints as migraine headaches, lower back and muscle pains, tension headaches, body aches and pain manifested as physical complaints; gastrointestinal disorders as diarrhea, constipation, peptic ulcer and colitis. The immune system depletion renders the individual to a high risk of attract of simple illness. In severe cases, Cohen and Williamson (1991), Hubert (1994), indicates that development of thyroid malfunctioning can lead to diseases condition as cancer and rheumatoid arthritis.
The Development of Burn-Out Behaviours

Unrelieved stress, which goes on day after day, month and year lead to burn-out. The condition is debilitating behaviour it has the power to weaken, even devastate, otherwise healthy energetic and competent individuals. Cohen (1978), suggests that the immediate experiences of stress is for one to do something to reduce its effect. They include use of sleeping drugs, excessive smoking and drinking as means of coping. Others are detachment and avoidance behaviour especially of significant to others, being cynical and justifying and rationalizing his behaviour with the popular phrase “after all I am doing what I can do for you people”. Burn-out behaviours as negative models of coping with stress may not be the same with all executives.

How to Prevent Stress in the Organization

Since studies have shown that stress have a negative effect on the performance of managers which by extension may disrupt the free flow of work, it is significant to examine ways it can be prevented as follows:

1. **Executive Time Management**

The importance and relevance of time management cannot be overemphasized. The government engages in time management by budgeting at the beginning of the financial year what it hopes to accomplish within a period of time. The school system also plan for a new academic year and the specification of a time period it will be accomplished. Church organizations also plan their yearly activities with a time frame for attaining them. The introduction of mechanical method of doing work has also reduced the spent in doing the same work by manual labour.

Drucker (1986) however view time as being totally inelastic priceless, totally perishable, irreplaceable and incapable of being stored in a unique resource that represents the actual hinting factor in all organizations. He observed that in spite of this, “there are constant pressures towards unproductive and wasteful time use” on the part of managers and workers alike. He therefore proposed a three stage approach for more effective time utilization as follows:

(i) The executive should first determine where his time goes by keeping a daily record of how he spends it.

(ii) Next, he should try to systematically manage his time by:

   (a) Identifying and eliminating “the things that are purely waste of time without results whatever”.

   (b) Delegating those activities (on the executive’s time log) which “could be done by somebody else just as well, if not better”.

   (c) Eliminating those activities by which he wastes other people’s time, such as unnecessary meetings.
(d) Pruning time wasters that result from “lack of system or foresight”, overstaffing, malorganization and “malfunction in information”.

(iii) Finally, he should try to consolidate the time that is normally under his control—his discretionary time—and apply them in large chunks, instead of in small disjointed bits, and devote them to his “big tasks that will really make a contribution”.

Drucker’s views on the effective utilization of time by executives, was based on a normal situation where the concern for work is given as serious attention. But this is not the case in Nigeria where precious corporation time is wasted in some public sector and work not taking seriously. In fact, government work is considered no man’s work. Besides, work generally is seen as punishment where only the employer stand to gain, consequently, employees tend to exhibit time wasting attitude by coming late to work, leaving the work environment without permission, attacking the employer as a greedy man who will not want to pay salaries and wages as it pleases them, etc.

However the following tips on better time management than can protect the manager from stress according to MacAlphine (1992) are as follows:

1) Set up a daily routing. Schedule definite times for routine matters such as meetings, going through the mail, communicating with colleagues, making telephone calls, regularly monitor your life of time.

2) Do the things which require maximum brain capacity when you are at your best. Attend to minor business when your brain cannot cope with anything but small things—keep a list/pile of these ready.

3) Fix deadlines for all jobs.

4) Do not postpone important matters that are unpleasant. They will block your brain; reduce your creativity and working capacity.

5) Analyze your interruptions (time-seaters). Take steps to avoid them, diminish their effect.

6) Fix definite times when you do not want to be disturbed as if you were having a meeting with yourself.

7) Do one thing at a time. Just keep an overview of the next jobs. It helps to remove the files, etc of other work from sight when working on one job, to help concentrate the mind on the job in hand.

8) Avoid taking work home unless you are certain you will do something about it. It is better to enjoy your leisure time.

9) Set a task of the day each and try to finish at least this task before you go home.

10) Arrange your breaks at times when you cannot work effectively, e.g. when key people are not available, material is not ready etc.
Effective Planning System

Planning can be defined as the process by which managers set objectives, access the future, and then design a line of action to follow so as to achieve the set goal and objectives of the organization.

Planning implies that managers think through their goals and action in advance and that their actions are based on some method, plan, or logic rather than on a lunch. Plans give the organization its objectives and set up the best procedures for reaching them.

According to Nwachukwu (1988), planning is particularly very important in a developing country such as ours, where resources are relatively scarce.

The aforementioned implied that for any organization to be successful, the manager must plan effectively how he is going to achieve the organization’s goals based on the available resources. The manager’s inability to plan well can pose a threat to achieving the goals and objectives of the organization. This is why Nwachukwu said that most Nigerian Managers don’t plant. He said further that this lack of planning can lead to frustration and then stress.

To prevent this stress as a result of lack of proper planning, managers can gain the following benefits from a good plan.

1) Planning encourages systematic thinking ahead by management
2) It leads to a better coordination of company’s efforts.
3) It leads to the development of performance standards for control.
4) It causes the company to sharpen its guiding objectives and policies.
5) It results in better preparedness for sudden development.
6) It brings about a more vivid sense in the participating executives of their interacting responsibilities.

Maintenance of Industrial Peace

To maintain industrial peace, managers must promote goods industrial relations since it is only in an atmosphere of industrial peace that productivity can take place. Industrial unrest can disrupt productivity and disorganize the manager’s plans from achieving organizational goals and objectives.

Industrial relations therefore can be defined as how the employers (manager) deal with his employees collectively and how employees deal collectively with the employers Okoh (1998). It can also be seen as the relationship between management and trade unions or staff associations. Sonubi (1980) defines Industrial Relations as the study of behaviour in employment relations.

Many managers think that they make the rules and call the shots. They think many workers will accept a subservient role because it is in their interest to do so and when employees react to domineering stance, they are surprised and hurt, arguing that the workers are biting the hands that fed them. Managers also extols the virtue of teamwork, where each worker strives hard and pulls his
weight to the best of his ability, while each accepts his place and functions and follows the leadership of the appointed managers.

The real situation is that management and workers are both interested in the prosperity and growth of the organization and its future security, as long as both parties feel that they are sharing the benefits equally. In many other cases both interests do not coincide; and the basis of industrial relations is that both sides will be using their bargaining power to advance and protect their own interests, Armstrong (1982).

The implications of the above, is that managers should try and avoid industrial stress by ensuring that they maintain a good industrial relations with their employees since a happy worker is a productive worker. It is therefore only in an atmosphere of industrial peace that workers will be productive. While the manager will be less stressful.

Ensuring the Smooth Flow of Work

The inability of firms to meet up with production and by extension customer’s orders or demand indicates that work is not flowing in the organization. This situation can be frustrating to the manager, which again lead to stress.

Therefore, for production to flow without hindrance, management must ensure that the following are achieved or put in place.

1) Staff must be well motivated through reward systems, so that they can put in their best to ensure that production is not disrupted.

2) Machines that will make the process of doing work faster should be installed so that customers order could easily be met.

3) There should also be steady supply of raw materials and power so that production will not be disrupted as this can lead to frustration.

4) Modern working materials should be provided for workers so that they can enjoy doing their work and by extension boost their productivity. The above factors are likely to promote the smooth flow of work in the organization and protect the manager from stress.

Staff Indiscipline

The behaviour of worker in an organization can lead to indiscipline and therefore stress on the part of the manager.

This indiscipline include perpetual lateness to work, insubordination, stealing, fighting, disloyalty, disclosure of company’s secrets, poor attitude to work, sleeping on duty, failure to observed safety rules, drunkenness, etc.

This inability of a manager to control the offences identified above can lead to indiscipline in the organization and consequently disrupt productivity.

Since the principles of delegation and accountability states that a manager will be held responsible for the failure of a given task and not the subordinate who failed to perform the task. It therefore follows that the manager
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will be held responsible for the indiscipline of his staff for failing to perform a given task.

A manager who finds himself in this type of situation where he cannot control his staff as a result of indiscipline will likely get frustrated and therefore suffer from stress.

This is why managers must apply disciplinary actions where staff are found wanting. This will promote the smooth flow of work and protect the manager from stress.

Conclusion

This study has revealed that managers actually go through stress in the process of carrying out their job.

Stress was seen to be something that has to do with destabilization of the equilibrium of the body mechanism by external factors (stressors) and the restoration of this equilibrium (homeostasis) effected in stress responses. Managers should therefore create a stress-free working environment where workers will be happy doing their job without any form of intimidation or oppression.

Recommendations

Based on the aforementioned, it is therefore recommended that managers could avoid or prevent stress in their organizations by an effective time managements, effective planning system, maintenance of a good industrial relations, ensuring the smooth flow of work and good staff discipline.

The recommendations advanced above, will check the stressful situations worker’s find themselves in the work environment since it is easier to prevent stress than allowing it to occur.

References


LANGUAGE ACQUISITION SKILLS: A NECESSARY GATEWAY TO SCIENCE AND TECHNOLOGY EDUCATION, CHALLENGES FOR THE 21ST CENTURY

L. O. Nwokeneme

Abstract

Language is indispensable in the life and existence of man as an individual as it makes communication and interaction possible. Success in science and technology cannot be possible without a functional language used for educational instructions. There is the need however, to be fluent and proficient in the use of the language as a means of communication. This can only be achieved if users have acquired the various skills and rudiments of the language. There is in fact, no way can we successfully combat the challenges posed by science and technology education without the acquisition of appropriate language skills. (This is because it is only with language that one verbalizes and interprets scientific concepts which the society requires so much) Accordingly, this paper examines some of the ways through which the skills and rudiments of the language should be acquired. Factors militating against the acquisition of language are discussed and suggestions for improvement are made.

Introduction

Language is most uniquely human. When we consider all the aptitudes or natural abilities and behaviour which characterize animate beings, language is the most distinct. The capacity to acquire and use language is a quality which distinguishes human beings from all other creatures. In the development of an individual as a social being, language is invariably, but unarguably a primus inter pares. The ability to think and carry out our thoughts is possible because language exists. It offers an individual the necessary potential and capacity to function as a social man. Accordingly, Halliday (1978:10) asserted that the “existence of language implies the existence of man”.

Language is the medium through which man becomes a personality. Without the existence of language, man would be little less than a beast. This assertion is true as language makes expression possible and communication easy. Words are the vehicle of thought. However, without an appropriate language, utterances will be totally impeded. In the development of a man as a social being, language plays a central role. All the developmental efforts of man revolve around language. Formal and informal upbringing of a child are possible because of the existence of language as a means of communication.

Invariably, it is the recognition of the monumental roles and functionalities which language plays in the upbringing of a child, on the one land, and its indispensability in all human activities on the other that Nigeria, in her
philosophy of education sees language as a *sine qua non* in all aspects of a child’s development, including education. It is for this reason that the *National Policy on Education* (2004: 11) stresses the use of the mother – tongue or the language of the immediate environment in the early years of a child’s training and the use of English Language at a later stage. This policy is in consonance with Halliday’s view that language is the only instrument with which educational instructions for the development of a child are imparted when he opines that Language is the channel through which the patterns of living are transmitted to him, through which he learns to act as a member of a society.

Language exerts so much influence in all human endeavors, providing solutions to the numerous problems facing man. Consequently, language implements, acts, influences and in fact, does all there is to be done. For instance, there are many varieties of language and dialects which enable one to express multiplicity of views, literature and ways of life.

Apparently, attempts to appreciate the importance, versatility and functionality of language reveal that people can only see as language allows them to see. Should we decide to explore the thoughts and activities of our predecessors, it is only language that can make this possible. On the same hand, when one looks forward in time, and finds out that one can plan only through language. To look outward in space and send symbols of communication or even explain whom one is, should there be anyone who cares to know, one takes recourse to language.

Consequently, the impact of language has affected studies in such disciplines in the social sciences as Psychology, Sociology and Anthropology. Thus Gleason (1975:10) opined that scholars in these courses of study have seen the need to investigate language as a form of human interaction. For instance, the desire to know and master English Language makes a scholar to study its systematic internal structures, its creative potentials, its ability to refer to abstraction and imaginary objects, and its ability to talk about itself, etc. It is in the light of this that the focal point of this paper is language acquisition, language learning, functions of language and the place of language in Science and Technology in the 21st century. The paper further discusses the factors militating against language learning and acquisition. It concludes by making suggestion for improvement.

**Language Acquisition**

Language acquisition and language learning are two recognized different processes. Language acquisition often refers to that inborn ability that an individual has in acquiring his mother – tongue or native language. This applies more appropriately to a first language situation with which an individual makes his first contact. Language learning on the other hand, applies more to the second language which an individual has to learn. It has been observed however, that in
a sufficiently conducive environment, children can acquire knowledge of the second language without formal classroom situation or training.

Commenting on this, William (1990:18) noted that some aspects of the second language (especially, the complex ones) will never be learned or acquired in the classroom especially, when it forms the medium of communication. Thus, language learning is a process brought about in a setting where subject matter is selected and graded, and activities organized to promote use of the language. For this reason learning process is not deeply integrated in the instructional setting, unlike in the natural setting where there is no inhibition or limit to exposure between language acquisition and language learning. The two are believed to be complementary to each other.

It is popularly believed that girls learn to speak more rapidly than boys. According to Crystal (1987:19) several researchers have shown that girls are linguistically superior at early ages than boys. Adetugbo (1979:15) supported this view when he writes that Gleitman and Gleitman’s finding reveals that girls are usually minimally in advance of boys in their language development. Differences are found due more to the ways in which boys and girls are brought up rather then the physiological and genetic factors.

Acquiring a language involves two distinct skills: The ability to produce speech in a spontaneous way and the ability to understand the speech of others. The former is relatively easy to study. All one needs is to turn a tape recorder on and analyse what comes out. Research into speech comprehension is far more difficult because one needs to take into account, not only what is spoken to the child, but the situation in which it is uttered and the child’s prior knowledge of the word. Echoing Jean Piaget, Routledge and Paul (1972:52-127) observed that children acquire language more rapidly within the first 18 months than in the later stages of their life.

Invariably, they contend that by the age of five, most children correctly identify themselves and others by sex. They also behave as members of their sex are expected to behave in the society. As they gain language and cognitive skills, children hear themselves called “boy” or “girl”. They observe what boys and girls do, accept the labels and behave accordingly. This acceptance is termed “identity taking”. Once the basic ground rules have been learned, labeling by others and identity taking by the individual act together to transmit traditional roles. Throughout life, the individual takes on a number of identities and learns the requirements of various roles.

By choosing a model such as sports hero or an admirer; a young person generally begins to learn how to be independent from family or peers and also forms meaningful relationship. He gains a self- chosen identity that is valued by others and contributes to self esteem. Through the model, behaviour takes on personal meaning and becomes something more than conforming to conventional norms.
**Innate Ability:** Children are born with an innate capacity for language development. The human brain is ready for language when children are exposed to speech. It is during this period that certain general principles for discovering or structuring language automatically begin to be in operation. These (innate ability) principles constitute what Routledge and Paul (1972:146) cited Chomsky who called it (innate ability or capacity) “Language Acquisition Device (LAD). With the use of this linguistic equipment, a child makes sense out of the utterances heard around him, deriving from this primary linguistic data. They further posited that Chomsky, (see Routledge & Paul: 127-128) an American Psychologist argued that the “linguistic universal” ability of language learning and acquisition are parts of human “genetic endowment “. He argued that if this is not so, “how is it that a child equipped at birth with no communication skills whatsoever, but only with the rudimentary verbal repertoire for expression, is able to acquire an ability as complex as language and so reliably and regularly”.

**Cognition:** Cognitive awareness is essentially in children’s language acquisition and learning. An already essentially established cognitive foundation is important. Before a child can use structures of comparison, “this car is bigger than that” or “Peter is fatter than Paul”, he would have developed the conceptual ability to make relative judgment of size. This link has been clearly shown in the early period of language learning. Routledge and Paul (1972) asserted that Piaget calls this cognitive ability “sensori-motor” intelligence in which children construct a mental picture of the world objects that have independent existence.

The traditional common sense view is that comprehension always precedes production. Children need to understand a word or grammatical construction before they can use it. Imitation is a distinct skill in language learning. Often, children imitate sentence patterns that they are unable to produce spontaneously. They stop imitating the structure when they start to use them in their speech. This is more noticeable when new sounds or vocabularies are being learned. Imitation is thus a kind of bridge between comprehension and spontaneous production. Children learn speech in the popular way by copying the utterances heard around them and by having their responses strengthened by reactions of those around them.

The acquisition of the ability to use language is one of the most impressive pieces of learning that an individual achieves in the course of his life. This (mother-tongue/language of the environment) of course can affect both the mother-tongue and language of the environment. This is often the first language with which an individual makes his first contact. The second language has to be learned. Although English is seen in Nigeria today as the language of our conquerors, it is nevertheless regarded as a second language in the country.

**Language Learning**

Language learning is known to emanate from four main stages. These are listening, speaking, reading and writing. These four language skills are very
important in the acquisition of any language especially English. In fact, success in every academic endeavour revolves around them. This is because the success of learners at the tertiary institutions depends on their ability to read and write and competence in listening and speaking. In fact, the level of students’ proficiency and competence they have acquired in these language skills, especially listening, speaking, reading and writing at the secondary school is inadequate to carry them through the tertiary level. This assertion is made on the understanding that much demand is made on each of these language skills at this stage of education. We cannot talk of any advancement in science and technology if our children, the students are deficient in these areas.

**Listening Skill**

Listening is a very important language skill. This assertion is made because what one speaks or writes is dependent on what he hears. It is for this reason that listening is seen as the first stage of language skills. It is thus very important to language acquisition, especially, English which is the main medium of educational instructions in Nigeria. Deficiency in this language skill leads to breakdown in communication and indeed, poor academic performance.

Consequently, a student who cannot listen effectively and attentively will find it hard to understand and interpret his lectures. Of course, we know that at the tertiary institutions, lecturing is one of the most important means of imparting educational knowledge to the learners. It is also known that at this level, every serious student spends more than three-quarters of his time listening to lectures and making notes. Therefore, for the listener to understand what is said, and respond appropriately, he must listen with concentration and attention. This is what James (1958) meant when he opined that listening is a selective process by which sounds communicated by some source are received, critically interpreted and acted upon by a purposeful listener. This can only be achieved through effective and active listening.

Purposeful or active listening calls for concentration and attentiveness which in turn, results in responsiveness. The understanding that active and purposeful listening is not easily achieved and that target audience often find it difficult to interpret or formulate meaning from what is heard make this paper look at this language skill as posing a serious challenge to science and technological education in the 21st century. Its acquisition and indeed appropriate application are conversely a necessary gateway for advancement in science and technology which the nation seriously needs.

**Speaking Skill**

Speech is another important language skill, second to listening. Both listening and speaking are technically referred to as oracy skill of the language as these are less complex to learn than reading and writing. This language skill is basic to all other language skills as it is the major medium of expression,
communication and interaction which are the goals of speaking. Generally, language is speech. Therefore, proficiency and functionality in any given language revolve around effective communication which manifests in speaking and writing. It is only through speaking that we externalize our feelings, thoughts and experiences.

Again, speech makes socialization possible. Every academic endeavour revolves around speaking and writing. For instance, it is the only channel through which learners ask and answer questions during lectures and clarifications are made through the same medium. Deficiency in this all important language skill poses a very serious set back in one’s academic progress.

**Reading Skill**

This language skill is very important as it plays a major part in formal education. Of all the language skills, reading is very essential for mastering English as a second language. According to Joof, (1988) reading ability in whatever discipline should be seen as one of the key factors for general success in academic work at all levels. Reading is an important instrument for competence and proficiency in English. A student who suffers reading deficiency will not only be limited in his learning but also knowledge, and skill acquisition. Almost all the academic activities students do, either individually or in groups primarily depend on the extent to which they can read.

Reading, according to Troyka (1990) is an activity which involves interaction of the page, eye and brain, a meaning making interaction. This is contrary to a mere looking at words in print, a situation Troyka described as passive activity Troyka’s view of reading is in consonance with that of Unoh (1989) who asserted that reading is a complex language processing behaviour that involves interpretation and meaning-making activity upon printed materials. Reading is in fact, the core of any language programme as it enhances language learning. It is not only employed as a tool for study, but also for creating awareness. The knowledge and education we acquire depend mainly on the quality and quantity of reading we do. Of course meaning-making reading is one that goes with comprehension.

It should be noted that the computer and other allied technologies are meaningless without meaning-making reading or reading with comprehension. With effective reading, the modern man finds it possible to reach and elicit more information, using computer. We talk of the world as a global village in which information around the world are reached and linked within few seconds through computer technology. However, this is impossible without effective and purposeful reading. We can communicate with the rest of the world through e-mail, mailing list, internet and other electronic communication devices, a situation which gives rise to Information Communication Technology (ICT). The availability of these ICT services are meaningful because we have acquired
Language Acquisition Skills: A Necessary Gateway to Science and Technology

appropriate reading ability. Lack of this basic language skill makes one almost ineffective and malfunctional.

Reading serves as a means of information acquisition. Students obtain information from textbooks and other printed materials through reading. Being able to read is not only a condition for academic success, but also a gateway to science and technological education which consistently poses a challenge even in this 21st century.

Writing Skill

Writing as an important language skill is the representation of the spoken on paper. As a means of communicating one’s thoughts, feelings and experiences, writing is of paramount importance. For the students, writing is an important academic tool as it is the medium through which class tests, assignments, term papers, seminars, conferences, workshops and examinations are carried out. It is also the medium through which research findings, laboratory experiments and results, new inventions are disseminated to the public. In other words, writing is the use of language in its written form to express thoughts and emotions. Through it, a writer not only communicates to the reader, but also narrates events, describes scenes, and explains a process. Perhaps, the functions of writing as a language skill include information dissemination, entertainment, mobilization and education.

Invariably, without writing as a language skill, nobody can talk of history which is a document of past events. Also, without writing, dissemination of news or information through print and electronic media cannot be possible. What is received as daily news or information in Nigeria today through print and electronic media derives from continuous writing processes which revolve around pre-writing stage (preparation/gathering information materials or data), the writing and re-writing stages to reshape and make necessary corrections and ensure that the grammar is appropriate for the occasion. All these are necessary in ensuring effective communication at this level. In fact, what can one do without writing? The answer is nothing. Our efforts in science and technology education cannot succeed without apt and effective writing skill. What is ICT if not reading and writing new technological findings and advancements. Really, the key to growth in science and technology revolves around writing and reading efficiencies. Through these, we can learn all there is to learn and react accordingly.

Functions of Language

Ordinarily, one makes conscious use of language when one wants to communicate ideas, tell people about oneself, circumstances, experiences or ask for information about others. In the same way, people use language to exchange facts and opinions. According to Halliday (1978: 48-50), the use of language involves purposes such as “referential, propositional and ideational “.
Continuing, Halliday expatiated that one of the commonest uses of language is as a means of getting rid of our nervous energy when we are under stress. He asserted that this is the clearest case of what is often called “emotive or expressive” function of language. One makes use of emotive language both consciously and unconsciously. For instance, swear words and obscenities which are often uttered when people are angry or frustrated are emotive language. Indeed, our voluntary verbal reactions to beautiful arts or scenery, expression of fear or affection as well as the emotional outpouring of certain kinds of poetry _interalia_ are emotive utterances of positive kinds.

Furthermore, language is also used for the purpose of recording facts. All kinds of record keeping such as history, geographical survey, business accounts, science reports, parliamentary acts, public data, etc depict the function of language. This is in fact, different from that used in everyday conversation. Verbal language is used as instrument of thought, mental work and mathematical calculations.

Language is used for the expression of identity. Our use of language can tell great deal about us. Information about our social background and personal data such as level of education, age, sex and personality can only be passed through language. Language also has a neutral or behavioural function as when used in thinking. This includes reasoning thinking evident in solving problems, telling stories, planning strategies, etc. Crystal (1987:19-22) describes this as “rational, directed and logical [and] proportional”. This kind of thinking is educative.

Language functions as social and ethnic identity. The various ways people participate in social structure, belong to many social groups and perform variety of social roles are possible through the use of language. The question of linguistic identity is strong in the case of ethnicity and nationhood. Perhaps this revelation accounts for why Egwim (2002: 164) saw language not only as “an instrument for communication”, but also “a symbol of social identity and an emblem of group membership and solidarity”. It is in the light of this that attempts to preserve ones language often leads to ethnic and political reactions which often result in the demand for self-government. Linguistic conflicts have in the past developed due to merging together of people of diverse socio-cultural and ethnic backgrounds.

The Place of Language in Science and Technology in the 21st Century

Language occupies very important place in the nation’s effort for advancement in science and technology. This assertion is made on the understanding that language provides solution to the numerous problems in science and technology, a key to national development. For instance, man thinks and carries out his thoughts with language. Really, man uses languages to do all he has to do. This is very true, as we can only see, act, influence and implement as far as language allows. No wonder Halliday (1978:12) asserted that language
makes the social man what he is as “there can be no social man without language”. The existence of language implies the existence of a social man since language is the means whereby people communicate and interact.

Corroborating the indispensability and versatility of language in man’s daily endeavours, Crystal (1987:6-7) also observed that language covers all human activities and interactions without which survival will be difficult and existence impeded, if not impossible. The question that arises then is:

(a) Can we talk of research of any sort without language?
(b) How do we write and disseminate scientific findings and laboratory results?
(c) With what language does one impart educational instructions and scientific knowledge to the students and young learners?
(d) With what language and how fast can scientific knowledge and technological discoveries be passed to poor scientific and less technologically developed nations around the world for the people to imbibe or learn?

Indeed, the answers to these questions are very clear. Here comes the monumental functions of language as means of communication and interaction and thus, the importance of its acquisition. Considering the tripartite position which English Language occupies in Nigeria such as national, official and language of international trade and diplomacy, this discourse believes that it (English) answers all the questions including that of ICT which of course serves as the medium of dissemination. It is for this reason that language acquisition skills form the focal point of this discourse.

Consequently, effective excursions have been taken into the four language skills internalizing their importance, and indispensability to the development and advancement of science and technology, a challenge facing the nation in the 21st century. While listening (hearing) and reading are technically referred to as receptive language skills, speaking and writing are also referred to as productive language skills. The proper acquisition of these language skills and their appropriate application will enhance users proficiency and competence in the language. Deficiency in any of these language skills will result in poor academic growth and performance and conversely, acquisition of science and technological knowledge which the nation seriously requires for her growth and advancement in the area.

Naturally, the literacy skills of language, reading and writing are important in the nation’s march to science and technological development. Problem in these areas can render any activity in science and technology malfunctional and inoperative. For instance, Fakunde (2001:12-16) criticized students inability to read functionally, arguing that this ineptitude has resulted in students persistent academic failure. For instance, reading and writing are pivotal to the acquisition and participation in science and technological knowledge, education and are functional to ICT activities. In fact they are the proof of
intellectuality. No wonder Nwoke (1993:11) observed that reading is a strategy used in equipping science and technology students to be able to verbalize the scientific concepts they possess. These language skills have been seen as indispensable tools that will make students and scientific researchers succeed in their academic endeavours in this 21\textsuperscript{st} century where computer has made the world a global village.

Furthermore, the age of technology and knowledge explosion has made it possible for every one to strive to know how to read and write as career opportunity basically depends on these skills. These literacy skills enable one to come in contact with a wide variety of knowledge which one can either copy, modify or even adopt for future uses. These language skills also enable us to participate, share and benefit from educational research findings, scientific discoveries and inventions beneficial to man.

The importance of language and the acquisition of its skills cannot be over-emphasized in this era of information explosion. There is the growing need for us to share in the new discoveries in science and technology around the world so as to explore new ideas and expand our own wealth of knowledge. We can only do this through reading, writing, listening and speaking in English.

The understanding that the acquisition of language skills and their effective application hold the key to the nation’s growth and development in science and technology is also shared by Okunnuga (1979:271). Considering the objectives of English for Science and Technology (EST), he declared that if Nigeria must attain her long cherished knowledge in science and technology, the following is imperative:

1. listening comprehension training in spoken science and technological English.
2. reading comprehension and reading training to the satisfaction of science and technological departments to facilitate intermediate study in science and technology;
3. the ability to speak scientific and technological English; and
4. the ability to write scientific and technological English.

In the light of the above, it has become apparent that student’s deficiency and inability in these language skills are among the problems that pose serious challenges to science and technological education in the 21\textsuperscript{st} century

Factors Militating against the Acquisition of Language Skills

Many factors militate against the learning and acquisition of language skills. One of these is inadequate language teachers. There is inadequate English Language teachers in most primary, secondary and even tertiary institutions in the country. This has grossly affected the teaching, learning and acquisition of language skills. The few available teachers often find it very hard to cover all the various parts of the language.
Nonchalance is another serious problem which militates against the learning and acquisition of English. This problem does not affect only the students, but also the teachers. Some language teachers really do not take the teaching of English very serious. They are often engaged with and committed to issues outside their employment in attempts to raise more money to meet personal and family demands. The result is that the teaching of English is either given less attention or totally neglected. The teachers usually rush students through the courses to meet the requirements of examination. This always leaves learners totally unexposed, ungrounded and unrefined in the skills of the language.

The students themselves seldom show any sense of interest or seriousness towards the learning and acquisition of the skills and rudiments of the language. During English Language classes, some students are often seen engaging themselves in less important issues such as conversing, playing or even copying notes or solving problems in other courses or subjects. Others play truancy, absenting themselves from English classes. All these affect effective learning and acquisition of the skills of the language.

Lack of expertise and pedagogic skills affect learning and acquisition of language skills. By this, I mean lack of good knowledge of the subject and skill for imparting knowledge to the learners. This in fact, has been a serious handicap to effective teaching and learning of English. Research has showed that there is serious disparity between what a teacher knows and what he actually claims to know. In fact, some English Language teachers have shallow knowledge of the subject and its pedagogy. This goes a long way to affect what they teach to the students and their general performance.

There is lack of incentive to language teachers as government no longer encourages in-service training for language teachers. Conferences and workshops on language are no longer sponsored by the government. Language teachers often find it difficult to shoulder the financial burdens of attending conferences and workshops. The result is that the teachers are not exposed to new research findings on the teaching of English Language.

Suggestions for Improvement
(a) There is the need for government to employ more qualitative English teachers who possess good knowledge of the subject and pedagogical skills. This will go a long way to improve the teaching and acquisition process.

(b) As a way of checking non-challance and making language teachers have job satisfaction, the government should make the teaching of English more attractive through the grant of attractive incentives such as sponsorship of workshops and conferences on English, in-service training and scholarship to language teachers. Classroom language activities should be somehow monitored to ensure that they use effective
teaching materials so as to enhance language acquisition skills during lecture deliveries.

(c) To ensure that language teachers to be employed possess appreciable expertise and pedagogical skills, they should be subjected to rigorous written and oral interviews. This will enable educational administrators engage teachers with proven abilities not based only on the certificates they cannot defend.

If all these are carefully but systematically implemented, the learning and acquisition of language skills will improve considerably. This will greatly enhance the efforts of serious language learners in their learning processes and consequently, learners expressive and productive performances are positively affected. Again, the nation’s quest for scientific and technological growth and advancement will be in sight. Furthermore, Nigeria will effectively join the current march for globalization. In deed, all these will be in vain without effective language policy that will ensure success in the learning, acquisition, knowledge and mastery of English Language as a medium of communication and educational training.

References


Language Acquisition Skills: A Necessary Gateway to Science and Technology


Joof, E.A. (1988). Enhancing levels of reading competencies in social studies: implication for the 6-3-3-4. The Farfam Journal of Multi-Disciplinary Studies 2(1) and (2) p.71-76.


SELF ASSESSMENT AND REALISTIC JOB PREVIEWS IN COUNSELLING FOR OCCUPATIONAL ADJUSTMENT

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Abstract
Most recent reviews of the value of Self Assessment in industrial and organisational settings concluded that the self-assessment motive will prompt people to seek information to confirm their uncertain self-concept rather than their certain self-concept and at the same time people use self-assessment to enhance their certainty of their self-knowledge. Major criticisms concern the excessive leniency apparent in Self Assessments and their poor accuracy. This article reconsiders the available literature with respect to leniency. It is suggested that leniency is common to all ratings, that there are individual differences in leniency and that degree of leniency is influenced by perceived consequences to the assessor. It is also argued that accuracy may be influenced by the purpose of the assessment and the extent to which the assessment is based on immediate experience rather than recalled, hypothetical or vicarious experience. Ways in which self assessments might be effectively used are suggested and the conclusions are discussed within the context of a four-component framework for the self assessment process.

Introduction
Self-assessment is a polymorphous concept because its meaning depends on a particular context as well as content. An Educationist, Asuquo (2005) regarded assessment as a multifacetal process that involves several procedures used in collecting information. He emphasized that the exactness of the measuring process, objectivity of the procedure and purpose to which its products are put, are what determine whether or not an activity is assessment. Ojerinde (1997) viewed self assessment as a process of estimating the nature, quality, value or worth of something while Ikpala, Onocha and Ayedeyi (1993) defined self-assessment as the process of organizing measurement data into interpretable forms on a number of variables. Such data are usually obtained through a wide variety of measuring instruments from various sources. Therefore self assessment can be considered as the process of ascertaining the level of teaching and learning objectives using multifacet measurement procedures. Self-Assessment can be classified into two categories – School based and External based. Assessment carried out by teachers within a school is called school based assessment while the one carried out by agencies such as West African Examinations Council (WAEC) or National Examinations Council (NECO) is regarded as External Assessment.
The self-assessment methods are believed to have the potential of matching the skills students acquired in school to the kinds of tasks which they would likely need to succeed in their future life. In self assessment, students are positioned to perform, create, produce or do something that requires time to use higher-cognitive level and problem-solving among others. These represent meaningful instructional activities which are relevant to their real-life task. Self-Assessment is broad-based and does not only concentrate on assessing logical and verbal abilities but also on visual, auditory, unaesthetic, intra-personal and inter-personal abilities.

Self-Assessments

Self-assessments at work have been receiving a very “bad press” in recent years. For example, Thornton (1990) concluded his review of the psychometric properties of self-assessment as follows:

“...This inescapable conclusion of this review is that individuals have a significantly different view of their own job performance than that are held by other people, rather than improving their self-view, this makes self-assessment possibly the only way self-evaluative motive that may cause a person’s self-esteem to be damaged”.

Reilly and Chao (2006) reviewed the literature on self-assessment with particular reference to personnel selection. They came to the conclusion that the psychometric and validity problems associated with self-assessment means that as far as personnel selection is concerned, it “cannot be recommended as a promising alternative.

Despite these depressing conclusion however, at a personal level, it is apparent to us all that we are continually making assessments of our own characteristics among behaviour and making decision based on these assessments. If these were as widely inaccurate as the evidence would seem to suggest, our working lives would surely be more of a mess than they already are, with unresolved superior or subordinate conflict. The purpose of this paper therefore is three-fold.

1) To re-examine the literature and see if, like the optimist, the bottle can be described as half-full instead of half empty.

2) To describe some of these factors that might account for the observed differences between self-assessment and other forms of assessment and

3) To suggest ways in which self-assessment might be applied more effectively.

Levine, Flory and Ash (1997) suggested that there is a lack of interest in self-assessment because of three assumptions: firstly, that individuals will inflate their estimates of their own skills, abilities or knowledge; secondly, that individuals cannot make accurate or reliable self-assessments and finally, that because of the first two assumptions, the validity of the self-assessment will be
very low. These three factors, leniency, accuracy and validity are examined in
details below:

**Leniency**

Most subordinates tend to underestimate their personalities and
achievements. McGregor (2004) concluded that all other researchers in the same
area showed that consistent overestimates in self-assessment, a notable exception
being Heneman’s study, and “comparison of self and superior Ratings of
Management Performance” Leniency according to McHregor (2004) and others
hold across several levels of employees for both trait and behavioural ratings and
for job related and person-related dimensions, these are openly confirmed.

There is a general tendency in self-assessments to be more lenient with
certain groups. This tendency in leniency however, is not unique to self-assessed
ratings and can be reduced by training. In many cases, the training may be
replacing one response with another. Experts have suggested that one of the
reasons for leniency in supervisors’ ratings especially when desire the supervisor
to avoid the unpleasant consequences that presumably surround discussion of a
poor rating.

Support for this interpretation for the leniency affect in self assessment
comes from Heneman who worked on “Comparisons of Self and Superior
Ratings of Managerial Performance”. He suggested that the reason for the lack
of leniency effect in his study was that it was made clear to all the participants
that the data were totally confidential and would be used for research purposes
only. Meyer (2001) however suggested that the opposite effect occurs especially
suggested that publicly announced appraisals tend to be more modest than those
given in confidence.

Although there would appear to be a discrepancy between these two
explanations, there seems to be little doubt that the leniency effect is common to
rating in general and not just self assessment rating. Besides, the magnitude of
the effect can vary and seems to be influenced by similar factors. In particular,
whilst there is some disagreement as to whether public disclosure increases or
decreases leniency, it is apparent that the consequences arising from the use to
which the ratings are to be put affects the raters. Supervisors were behaving
defensively and people were defensive of their self image of modesty but it might
also be that the knowledge that the ratings were to be usefully used led to a more
accurate concentration on the rating process. It would appear therefore that more
concentration has to be given to the circumstances in which the rating takes place
and the expected consequences to the rater. Teel (2007) in a somewhat anecdotal
report on his own experiences as a Counselling Psychologist reported that of 24
self appraisals over a period of years with his subordinates, the subordinate
invariably estimated themselves lower than his rating. He suggested that one of
the possible reasons for this is that the subordinate was likely to receive praise in
the discussion of the discrepancy. Thus, it is not merely disclosure or lack of disclosure which is important, but the circumstances in which the disclosure is made. It might be reasonable to expect that the level of leniency increases the longer the rater and rate have been acquainted. Given the length of this relationship in self assessment, it is perhaps surprising that the effect is not larger than what was observed.

Individual Differences

It has been observed that the leniency effect is a general characteristic of self assessment but there are some individuals for whom the effect is more pronounced. The amount of leniency varies and is shown to be more pronounced amongst older employees who were dissatisfied with their pay, those considered not to be promotable and those who were rated lower performers by others but who had high self esteem. In the rating of others, there also appears to be individual differences between raters which may be masking more useful results. For example, Bernadin and Buckley (2005) when discussing strategies in rater training suggested that it might be useful to identify those raters who were “idiosyncratic”. Indeed, if leniency was a constant phenomenon, it would be possible to take account of it and merely apply a correction factor to each self assessment. From the literature therefore it appears that:

1) Leniency is common to all ratings not just self assessment;
2) That self raters and other raters show individual differences in the extent to which they exhibit leniency;
3) The amount of leniency is affected by the perceived consequences to the rater whether it be self or others.

Accuracy and Validity

The second assumption quoted by Levine, Flory and Ash (2006) concerned the accuracy and validity of self assessments. The criteria used in order to assess the validity of self assessments have included objective measures of performance such as survival and commission levels for the assurance agents but majority of studies have used supervisory ratings. Other studies of self assessment have concentrated on particular abilities and these have generally used standard tests as the criteria although some have used performance tests. For example, Ash (2007) used various performance tests in order to test the typing skills of “business ready” high school students.

Supervisors Ratings

The level of agreement between self assessments and assessment by supervisors varies quite widely. Levine (2006) used self assessed abilities. Of the 13 possible correlations, only seven were significantly related to the criteria. Ekpo-Ufot (2003) in a study of junior workers in a government ministry reported correlation of 0.23 (P<0.01) between self and supervisor-rated performance.
William and Ufot (2005) however used both global and dimensional ratings of effort and performance obtained from both self and supervisor. Whilst the correlations between both global and dimensional measures of effort were low (0.24 and 0.33, P<0.01), those for performance ratings were 0.48 and 0.60 respectively (P<0.01). As Thornton (2000) reported, the variety of the findings is such that no conclusions can be drawn other than perhaps, to note that at least, all the relationships were in “right” direction. If the supervisor’s rating is considered to be the criterion, this is perfectly acceptable but perhaps, we should not lose sight of the fact that they can also be considered as inter-rater reliabilities and when viewed from this perspective, the range and level of various correlations are more understandable, (Bassett and Meyer, 2008).

Objective Criteria

Ekpo-Ufot (2003) used a measure of “complaining behaviour” and found a correlation of 0.30 between this rating and self assessment ratings. More commonly however, ability measures have been used. DeNist and Shaw (2002) for example, compared self assessed abilities with tests of those abilities and reported ten correlations out of twenty four that ranged from 0.05 to 0.40, Levine (2006) as well as using supervisor ratings also used the objective tests and reported a similar range from 0.03 to 0.58 with a median of 0.36 (P>0.05). Primoffs (2007) also reported a similar range but the lower correlations were with less familiar abilities while those that might be expected to carry out the exercise are biased. It is important from many of these studies that the accuracy of self assessment is affected by such factors as the extent to which the dimensions of the ability being assessed are well understood and familiar. Indeed, Primoffs (2007) has suggested that the correlations between self assessment and other variables is affected by the extent to which the self raters and those who prepare the test have a common understanding of the behaviour statements and also the extent to which self raters have a common base for their ratings.

Commenting on the lack of a theoretical basis for self assessment, Heneman (2007) considered Primoffs (2007) suggestions to be a contribution towards establishing such a theoretical base, but once again, it appears that the factors that are important in self assessment are also important in other studies of rating. The need for a common understanding of both the dimensions to be rated and of the various anchors on these dimensions has been behind many schemes for rater training and the development of such method as Behaviourally Anchored Rating Scales (BARS). Indeed, the development of BARS is an attempt by means of rater participation in scale construction to reduce the effect of what Makin, and Randall (2005) have called “problem of meaning”. Heneman (2004) has also pointed out that the dimensions used in most studies have been imposed by the researchers, a factor which again, will tend to reduce the accuracy of both general and self assessment ratings.
It can be seen therefore, that any form of rating unless the rater keeps it totally to himself, is part of a social process and it is subject to the influences inherent in any social interaction. As a social act, self assessments can be seen as an act of “self disclosure” in a situation which is usually of major importance to the individual and hence “ego involving”. Self disclosure in general, is fuller and more “accurate”, the closer the relationship between the people involved the Counselling psychologists and their clients. Thus, there are greater revelations to counselling psychologists through self-disclosures. A similar form of detachment and confidentiality is that researchers hope to gain accurate self-assessment from their subjects. It is unlikely however, that they can sustain this impression. People especially in industries realize that the researcher must have a reasonable relationship with management in order to be allowed to pursue the research. In majority of the case, the management gain directly and indirectly from the research. Perhaps those who are asking people to assess themselves rather than expecting accuracy because of the promise of confidentiality should also seek to establish a trusting relationship with the subjects.

Although the influence of perceived consequences may be important with all forms of ratings, it is likely to be of greater importance in self assessment where the consequences are probably more significant, not least because of the greater involvement of self image and self esteem. The inclusion of a factor which is concerned with the anticipated consequences of rating procedure will also go some way to answer Heneman’s suggestions that we should look at the effects of rating system itself on the ratee and also with Tenopyr and Oettjen (2002) also agreed with other reviewers that there has been too much emphasis on the rating format and not the process of rating and appraisal.

**Occupational Choice and Self Assessment**

As previously mentioned, self assessment is an integral part of occupation decision-making process. Therapy to apply for a job and if it is offered, whether to accept or turn it down all involve some self assessment and a comparison of counselling psychologists own abilities, experiences and preferences with the requirements and characteristics of the job on offer. Inevitably, this matching is sometimes not as efficient as might be hoped, resulting in labour, turnover and cost to the organisation and the individual concerned.

**Realistic Job Previews**

In an attempt to reduce such turnover, Realistic Job Previews have been used in an attempt to improve individual’s knowledge of the job characteristics and requirements. In their recent study Reilly, Blood, Brown and Malesta (2009) used two types of job previews, a film and a job visit in an attempt to influence the turnover rate of telephone service representatives. The results were all negative. There was no significant difference between acceptance rates, met
expectations, job commitment or turnover for any of the groups. These findings at variance with the conclusions of Wanous (2004) and others led Reilly and his colleagues to review other independent studies. They found 11 out of 21 which met their criteria and by pooling the data, reported significant differences in turnover across all studies and also, when the jobs were more complex. They concluded however that Realistic Job Previews are unlikely to be useful in self selection especially when the jobs are at relatively low level. Indeed their only advantage is in communicating a favourable organisational image. This view is supported by Tenopyr and Oeljein (2002) who suggested that the main objective of Realistic Job Previews should be to take discussion of job characteristics out of the employment interview.

Almost all the quoted studies, however, used vicarious rather than experiential methods of job previews normally using audio-visual, booklets or in a few cases, a job visit or talk with a current employee. The assumption in such methods of Realistic Job Previews however, is that the applicant has a realistic assessment of his own abilities and that the main purpose of preview is to provide knowledge concerning the nature of the job. As argued earlier however, the accuracy of self assessment (other things being equal) is increased, the greater the level of experiential knowledge. Perhaps, the most realistic form of previewing a job would be a period actually set aside for the job and indeed some employers do offer a probationary period most notably in universities and in the Armed Forces respectively.

Work Sample Tests

A more limited form of previewing the job through experience of it is perhaps gained through trainability or work sample tests. The efficacy of such tests as a selection technique has been demonstrated in a range of studies, Robertson and Downs (2006) and Robertson and Kandola (2006).

As Downs, Faru and Colbeck (2008) pointed out, the emphasis in these tests has been the classic selection approach with little attention being paid to experience of the subject, although in their recent review Robertson and Kandola (2006) considered the evidence on applicants reaction to such tests. DeNist and Shaw (2002) reported the use of a test for sewing mechanists each applicant being graded A (highest) to E (lowest) in terms of their assessed trainability. Fortunately and perhaps rarely, the candidates were not selected on the basis of test performance and job offers were made to all candidates. None of the candidates was informed of his assessed performance on the test. Of those who were assessed A, over 90 percent took up the job offer and started, of those assessed D, slightly over half started, whilst of those assessed in the lowest grade E, less than a quarter (23.1 per cent) started. Using as a theoretical basis, Bern’s theory (2002) of self-perception. DeNist and Shaw (2002) suggested that individuals by using the same ones as the assessors, makes a self-assessment similar to that of the assessor. The method used by Downs and her colleagues
does not allow us to identify whether the reason behind the rejection of the job by those poorly assessed was due to a change in the individual’s self assessment or whether it was due to a change in their expectations concerning the job itself. The relatively simple nature of the job in a traditional factory environment would have a reasonably good idea of the job and that it was the feedback provided by the test that affected their self assessment. It is interesting however that of the 1134 applicants, the number of those rated below the suggested cut-off rating of C was only 92 or eight percent. As Sheppard and Belitsky (2006) suggested, it might be that the selection by self assessment took place at the time of the decision to apply.

The evidence suggests therefore, that accuracy might be improved when self assessment is based on experience and that if the consequences are seen as relevant and important to the person concerned, this will also influence the assessment produced or at least, will influence action taken on the basis of the assessment.

**Discussion and Conclusions**

Turning to the processes involved when self- assessments take place and drawing heavily on the ideas of Levine (2006) and Bandura (2000), it is possible to propose that the following four components form the basis of the self-assessment process:

1) **Self-Observation:** The individual observes his or her own behaviour;

2) **Judgment:** Having observed performance, the individual is now in a position to evaluate it.

3) **Self-evaluation:** At this stage, the individual is able to make some “self evaluative reaction which can be positive, neutral or negative and

4) **Reporting:** (Self-disclosure) This is the stage where reports of self-evaluative activities may be passed on to others.

When other assessment rather than self- assessment is taking place, it is evident that the process can be divided into four similar components, that is, observation, judgement, evaluation and reporting. On this basis, self and other assessments do not involve different basic processes. The main difference rests on the fact that in one case, we are examining ourselves and in the other, someone else is the focus of our attention.

During the observation and judgment phases of the process, it is possible that (in general) researchers will make more lenient observations and judgments of their own behaviour than the behaviour of others. This is likely to be particularly true if the judgment is based not on immediate observations of behaviours but on recollections of previous behaviour or predictions of future behaviour. This would be the case, for example, with traditional job preview when the applicant is the passive recipient of information about the job and the
job requirements. If however, the job preview is experiential and provides the applicant with an opportunity to observe his or her own behaviour in a realistic setting, then the observational and judgmental phases of the assessment process may produce more accurate assessment. Similarly, the accuracy with which could assess others would be affected by the opportunities available to observe relevant behaviour. The differences between self and other assessment and the beneficial effect that direct experience may have on the accuracy may be related therefore to the observation and judgment components of the assessment (although further research is needed to support or disconfirm these tentative suggestions).

However, it is not only during the first two phases that accuracy is influenced. The evaluation and reporting phases are also likely to be important since the personal and psychological impact of assessments are likely to be much more significant when the object of assessment is oneself and as research described earlier has suggested, the purpose of assessment is likely to exert an effect on reported assessment of both self and others.

Conclusions
Self assessment is not different from other forms of assessment, it is affected by the same variables and can be improved by manipulating these variables.
Self assessment will be affected by the level of experiential knowledge of the performance or ability to be assessed and
The accuracy of reporting of assessments and in particular self assessment, will be influenced by the perceived consequences of that reporting. Assessment, except in very rare cases, is a social action involving the experts' relationship with others.

References


ORGANISATIONAL CHANGE

Musah Ishaq and Momoh Suleiman Imonikhe

Abstract
In today’s increasing competitive business environment, organizational change is becoming inevitable. Today, organizations are experiencing transition in areas of technology, process reengineering, merger and organizational restructuring in order to remain competitive. However, although these areas impact on the employees at all levels of the company, management often overlooks these facts. This paper examines the nature of change, types of change, forces responsible for change, why organizational members resist change and finally ways of managing these changes that are inevitable. By understanding elements of organizational change and its impacts on employees as well as the appropriate way of managing people through these revolution, organization leaders will minimize the negative impact change has on productivity and performance. In conclusion, it was arrived at, that since organization operates in an environment of constant change, it is imperative for the organization to anticipate any change in the environment and proactively work towards eliminating the effect it might course the organization. On the recommendation it was spotted that transition in areas of technology, process reengineering, merger, organizational restructuring should be the focus of the management in order to remain competitive.

Introduction
We live in a world changing as the day progress. As it is often said, the only constant thing on earth is change. As a result of this fact, and in order to meet up with the challenges pose by these changes, organization must also move along this wind of change, otherwise, it may be left behind. Organizational change is a necessity to any organization that aspires to be relevant in the scheme of things.

Conceptually, the change process starts with an awareness of the need for change. Haven identified and choice made of the preferred actions to be taken. It is necessary to decide on how to get “there” from “here”

It must however noted at this juncture that the introduction of change is not just an easy thing to go by, there are some problem that may be encountered in the process of introducing change. According to Michael Armstrong, (A Hand Book on Human Resource Management Practice, 2006), the problem associated with the introduction of change may include, resistance to change, low stability, high level of stress, misdirected energy, conflict, and loss of momentum. Based on these facts, there is the need to anticipate likely impediments to the introduction of change.
Typically, the phrase “organization change” is about a significant transformation in the organization, such as reorganization or adding a major new product or service. It can be seen as any action or set of actions resulting in a shift in direction or process that affects the way in which an organization works.

Change can be deliberate and planned by leaders within the organization or change can originate outside the organization and be beyond its control. Change may affect the strategies an organization uses to carry out its mission, the processes for implementing those strategies, the tasks and function performed by the people in the organization, and the relationships between those people. Citing an instance with Nigerian business environment today (especially in the banking sector), mergers, inquisition, new technology, restructuring and downsizing are all factors that contribute to a growing climate of uncertainty. As a result, people have deep attachments to changing work conditions is a key for individual and organization survival. Change will be ever present and learning to manage and lead change includes not only understanding human factors but also skill to manage and local change effectively.

**Types of Organizational Change**

 Basically, there are two main types of change, planned and unplanned change. Michael Arsmrong, 2006, called it Strategic and Operational change.

**Planned Change:** According to James A.F. Stoner, et al. (Management 1995). Planned change is a deliberate design and implementation of a structural innovation, a new policy or goal, or a change in operating philosophy, climate or adapt to changes in the external environment or to achieve new goals. Planned change occurs when leaders in the organization recognize the need for a major change and proactively organize a plan to accomplish the change. Planned change occurs with successful implementation of a strategic plan, Plan for reorganization, or other implementation of a change of this magnitude.

**Unplanned Change:** Unplanned change usually occurs because of major or sudden surprise to the organization, which causes its members to respond in a highly reactive and disorganized fashion. Unplanned change might occur when the Chief Executive Officer suddenly leaves the organization, significant public relation problems occur, poor product performance quickly results in loss of customers, or other disruptive situation arise. According to Authenticity Consulting L.L.C (USA), other kind of organizational change may include.

1. **Organization-wide versus Subsystem Change:** Examples of organization-wide change might be a major restructuring, collaboration or “rightsizing” Usually, organizations must undertake organization-wide change to evolve to a different level in their cycle, for example, going
from a highly reactive, entrepreneurial organization to one that has a more stale and planned development. Experts assert that successful organization change requires a change in cultural change is another example of organization- wide change. Examples of a change in a subsystem might include addition or removal of a product or service, reorganization of a certain department, or implementation of a new process to deliver products or services.

2. **Transformational versus International Change:** An example of transformation change might be changing an organization’s structure and culture from the traditional top-down, hierarchical structure to a large amount of self –directing teams. Another example might be Business Process Re-engineering, which tries to take the major parts and processes of the organization and then put them back together in a more optimal fashion. Transformational change is sometimes referred to as quantum (sudden) change. Examples of incremental change might include continuous improvement as a quality management process or implementation of new computer system in to increase efficiencies. Many times, organizations experience incremental change and its leaders do not recognize the change as such. Examples of a change in a subsystem might include addition or removal of a product or service, reorganization of a certain department, or implementation of a new process to deliver products or services

3. **Remedial Versus Development Change:** change can be intended to remedy current situations, for examples, to improve the poor performance of a product or the entire organization, reduce burnout in the workplace, help the organization to become much more proactive and less reactive, or address large budget deficits. Remedial project often seem more focused and urgent because they are addressing a current, major problem. It is often easier to determine the success of these projects because the problem is solved or not. Change can also be developmental-to make a successful situation even more successful, for example, expand the amount of customers served, or duplicate successful products or services. Development project can seem more general and vague than remedial, depending Models of Organizational Change

The best-known change models are those developed by Lewin (1951) and Beckhard (1969). But other important contributions to an understanding of the mechanisms for change have been made by Thurley (1979), Quinn (1980), Nadler and Tushman (1980), Bandura (1986) and Beer el al (1990).
The basic mechanisms for managing change, according to Lewin (1951), are as follows:

i. Unfreezing – altering the present stable equilibrium which supports exiting behaviors and attitudes. This process must take account of the inherent threats that change presents to people and the need to motivate those affected to attain the natural state of equilibrium by accepting change.


iii. Refreshing – stabilizing the change by introducing the new response into personalities of those concerned. Lewin also suggested a methodology for analyzing change which he called field force analysis. This involves:

iv. Analyzing the restraining or driving forces that will affect the transition to the future state; these restraining forces will include the reactions of those who see change as unnecessary or as constituting a threat;

v. Assessing which of the driving or restraining forces are critical;

vi. Taking steps both to increase the critical driving forces and to decrease the critical restraining forces.

According to Beckhard (1969), a change programme should incorporate the following processes:

1. Setting, goals and definite the future state or organizational condition desired after the change
2. Diagnosing the present condition in relation to these goals;
3. Define the transition state activities and commitments required to meet the future state;
4. Developing strategies and action for managing this transition in the light of an analysis of the factors likely to affect the introduction of change.

There is no particular formula for managing Organizational Change. Manager may approach change in a number of ways, depending on the organization’s culture, history, and the nature of the change being implemented. At the most basic level, however, managers should try to build flexibility into the organization (into its people, technology, systems and thinking) to create a work environment that is open to change and able to accept it. According to Boston, M.A, (Management Decision and Research Center; Washington, DC 2000), the following are some key points that can help managers achieve the goals of organizational change.

a) **Determine the context for change:** This is a period of information gathering and analysis. Some questions for managers include: what is imperative for change? Who are all the groups that need to be involved
in the proposed change, both within and outside the organization? How are they likely to be affected by the change? What support will be needed from them during the change process, and how prepared are they to give it? What are the potential impediments, both internal to change? What resources and system supports does the organization have implement the proposed change? What others are needed?

b) **Build support for change:** Commitment to change usually begins with a small group of "core believers" or champions of the change initiative, who share a common new vision for the organization and are willing to do what it takes to make it a reality. The core believer group is usually comprised of high level, influential managers and staff who bring credibility and personal influence to the change initiative. Early in the change process, these core believers need to involve a large group of “initial participators” who don’t necessarily have the same level of commitment to change as do the core believers, but they participate in the initiative out of loyalty to the organization. As the change process take hold and its success are publicized, support will spread to other typically “wait and see” whether they should commit to the initiative.

c) **Develop a motivating vision:** A clear and concise motivating vision is needed to “inspire” a large number of employees to change. People need to know why change is desirable, why they should make the effort to support it, and what it will achieve. The change can be very painful to some employees whose jobs may require new skills, transfers or even elimination. The motivating vision should be sufficiently concrete so that people can understand what it means and why the change is necessary.

d) **Articulate clear, specific and realistic goals and strategies:** A vision helps motivate people, but specific goals and strategies are needed to guide them as they undertake the steps necessary to make the vision a reality. In addition, having clear goals helps the organization assess its progress during the change process.

e) **Communicate:** Clear concise communication about the need for change, the vision, and the change process pave the way for understanding and acceptance. The rule of thumb is to use all available methods of communication to stakeholders and staff including: meeting or retreats, email, department newsletters, bulletins, poster, and, in some instance, one on-one meeting with staff members particularly those who are having difficult accepting the change. Mangers need to be aware that communication is a continuous process and that messages related to the change effort require constant reinforcement.
f) **Identify barriers to change and develop strategies for overcoming them:** There are many types of barriers to change. These may be internal, external, psychological, cultural, systemic, and logistical. All these can hinder or subvert the change process. Engaging staff and/or stakeholders in structured creative dialogue can identify these possible barriers. Once they are identified, they must be promptly addressed. Problem that are ignored and allowed to faster breed resentment, distrust, and uncertainty.

John P Kotter’s, a Harvard Business School Research identified eight steps organizational change in his work (Winning at Change, 1998).

**Step One: Establish a Sense of Urgency**
1. Identify potential threats, and develop scenarios showing what could happen in the future.
2. Examine opportunities that should be, or could be, exploited.
3. Start honest discussions, and give dynamic and convincing reasons to get people talking and talking.
4. Request support from customers, outside stakeholders and industry people to strengthen your argument.

**Step Two: Form a Powerful Coalition.**
1. Identify the true leader in your organization.
2. Ask for an emotional commitment from these key people
3. Work on team building within your change coalition.
4. Check your team for weak areas, and ensure that you have a good mix of people from different departments and different levels within your company.

**Step Three: Create a Vision for Change**
1. Determine the values that are central to the change.
2. Develop a short summary (one or two sentence) that captures what you “see” as the future of your organization.
3. Create a strategy to execute that vision.
4. Ensure that your change can describe the vision in five minutes or less.
5. Practice your “vision speech” often.

**Step Four: Communicating the Vision**
1. Talk often about your change vision.
2. Openly and honestly address people’s concerns and anxieties.
3. Apply your vision to all aspects of operation-from training to performance
Organisational Change

4. Lead by Example.

Step Five: Remove Obstacles.
1. Identify, or hire, change leaders whose main roles are to deliver the change.
2. Look at your organizational structure, job descriptions, and performance and compensation system to ensure they’re in line with your vision.
3. Recognize and reward people for making change happen.
4. Identify people who are resisting the change, and help them see what’s needed.
5. Take action to quickly remove barriers (human or otherwise).

Step Six: Create Short – Term Wins.
1. Look for sure-fire projects that you can implement without help from any strong critics of the change.
2. Don’t choose early targets that are expensive. You want to be able to justify the investment in each project.
3. Thoroughly analyze the potential pros and cons of your targets. If you don’t succeed with an early goal, it can hurt your entire change initiative.
4. Reward the people who help you meet the targets.

Step Seven: Build on the Change
1. After every win, analyze what went right and what needs improving.
2. Set goals to continue building on the momentum you’ve achieved.

Step Eight: Anchor the Changes in Corporate Culture.
1. Talk about progress chance you get. Tell success stories about the change process, and repeat other stories that you hear.
2. Include the change ideals and values when hiring and training new staff.
3. Publicly recognize key members of your original change coalition, and make sure that rest of the staff-new and old-remembers their contributions.

The Focus of Change
Leavitt et al. (1973) proposed that change may focus on any of the following subsystems in an organization or on all:

Structure – Levels of hierarchy, spans of authority, centralization.
Technology – complexity, degree of employee usage, operator control and responsibility.
People – values, beliefs, attitude, motives, drives competencies.
Task – job design, repetitiveness, physical and cognitive demands, autonomy and discretion.
Resistance to Change

People resist change because it is seen as a threat to familiar pattern of behaviour as to status and financial rewards.

Michael Armstrong gave the following reasons why people resist change:

1. **The shock of the new** – people are suspicious of anything which they perceive will upset their established routines, methods of working or conditions of employment. They do not want to lose the security of what is familiar to them.

2. **Economic fears** – loss of money, threats to job security.

3. **Inconvenience** – the change will make life more difficult.

4. **Uncertainty** – change can be worrying because of uncertainty about its likely impact

5. **Symbolic fears** – a small change that may affect treasured symbol, such as a separate office or a reserved parking space, may symbolize big ones, especially when employees are uncertain about how extensive the programme of change will be.

6. **Threat to interpersonal relationships** – anything that disrupts the customary social relationships and standards of the group will be resisted.

7. **Threat to status or skill** – the change is perceived as reducing the status of individuals or as de-skilling them.

8. **Competence fears** – concern about the ability to cope with new demands or acquire new skills.

Other reasons why people resist change may be due to the following,

1. **Fear of failure** – Because the past methods worked very well for employee, they may not see any reason to change from the old method for fear of failure in the new method.

2. **Creatures of habit** – Doing things in the same routine becomes comfortable to employee, so asking theme to change from their comfort zone, is asking them to change from the way they are used to.

3. **No obvious need** – if a change does not affect the employee as a person, or his job, he may not see any obvious for the change.

4. **Loss of control** – Familiar routine helps employee develop a sense of control over their work environment. Being asked to change from the way they operate may make employee feel confused.

5. **Closed minded** – Some employee seems to have made up their mind about a particular way or method of doing thing, so are not ready for any kind of explanations.

6. **Unwillingness to learn:** Some employees are just unwilling to learn anything new.

7. **Fear of the unknown** – Employee may resist change simply because it is something unfamiliar, and they may imagine a worst case scenario, which
Organisational Change

can be very scary. They let fear of the unknown become their rationale for not giving change a chance.

At this juncture, manager needs to recognize that resistance to change may be the result of the change itself or to the method of implementation of the change. A successful manager therefore takes the necessary action to minimize or eliminate resistance to change.

Change Management

The employee does not have any responsibility to manage change – the employee’s responsibility is no other than to do their best. The responsibility for managing change is with management and executives of the organization – they must manage the change in a way that employees can cope with it. The manager has a responsibility to facilitate and enable change, and all that is implied within that statement, especially to understand the situation from an objectives standpoint, and then to help people understand reason, aims, and ways of responding positively according to employee’s own situations and capabilities. Increasingly the manager’s role is to interpret, communicate and enable – not to instruct and impose, which nobody really responds to well.

Reactions to Recent Changes in the Nigeria Banking Sector

Recently, the Nigerian Banking industry has been undergoing some process of regeneration. It all started when Prof. Charles Chukwuma Soludo was the governor of the Central Bank of Nigeria, and it was tagged, “Consolidating the Nigeria Banking Industry”. In an address delivered to the special Meeting of the Bankers’ Committee held on July 6th 2004 at the CBN Headquarter, Abuja, Prof. Chukwuma Soludo said, “our goal is to consolidate and build upon the achievements of the sector especially in the last ten years and to take the system to greater height”. This gave rise to setting up a capital base for all Nigerian banks, which then led to merger and acquisition. Before he became the governor of Central Bank of Nigeria, there we 89 banks in Nigeria with about 3,300 branches. Before leaving office, the Nigerian Banks had reduced to 25.

Also the current CBN Governor, Sanusi Lamido in his recent statement said “the apex bank is not pursing a new reform agenda in the nation’s banking sector”. He stressed that his administration is continuing with the reform process that date back to two of his predecessor’s reform process. The consolidation of Nigerian Banks resulting in merger and acquisition as witnessed in the past few years is intended to give rise to a large bank which will use its synergy to generate net income, engender economic of scale, save cost, synergies and shareholders’ return and many others.

However, despite all the promises in the Nigerian banking reform process, it has largely received criticisms from some management, employees, and the general public at large. When the current CBN Governor started his banking sector reform, leading to the sack of five bank chief executives on
August 14th last year, many considered it as a controversial decision, but many others applauded it.

**Conclusion**

Every organization operates in an environment of constant change. In order to survive, it is imperative for the organization to anticipate any change in the environment and proactively work towards eliminating the effect it might course the organization. This includes dealing with all the aspects of human behaviour and the attitude towards change.

**Recommendations**

1. Change management should be re-invigorated to impact in all aspects of the organization, if the best result must be achieved.
2. Management and staff of the organization should appreciate and embrace the inevitability of change and not resist it.
3. There should be technological transition, process re-engineering, merger, organizational restructuring in order for the organization to remain competitive.
4. The strategies for change should be well articulated for an effective change realization
5. Management should be proactive rather than reactive to the effect of change.

**References**

Basy Udo, (2010). Central bank, a protector of the baking sector


Field Guide to Consulting and Organizational Development
http//www.Authenticityconsulting.com


K. Lewin (1947). Frontier in group dynamics; Concept, method and reality in social science, human relation.

Organisational Change

Micheal W. Durant (1999). CPA managing organizational change copyright by the credit research foundation. All right in this book are reserved.

Prof. Chukwuma Soludo Consolidating the Nigerian Banking Industry to meet the development challenges of the 21st century an address delivered to the special meeting of the banker’s committee held on July 6th 2004 at the CBN Headquarter, Abuja.

Rafe Harwood Organizational change in today’s Economy models of change and overcoming employee Resistance

Sanusi Lamido Sanusi, (2010). Governor, Central bank of Nigeria, being a full text of a convocation lecture delivered at the convocation square, Bayero University, Kano on February 26
THE IMPACT OF INTERNATIONALLY FUNDED PROJECTS IN AKOKO SOUTH-WEST LOCAL GOVERNMENT AREA OF ONDO STATE, NIGERIA

Toju Francis Balogun and Monday Ohi Asikhia

Abstract
This paper examines how internationally funded projects are identified as the needs of the communities. The primary data source for this study was through the administration of questionnaires. Seven communities were selected and a total of 250 structured questionnaires were administered. The study shows that projects were identified as felt needs by the communities. The rural people were consulted before the implementation of the projects was commenced. It was observed however, that projects were not carried out directly by international organizations but through the local government officials. It was also observed that the projects were not evenly distributed within the local government area. Most of the projects were found to be functional with the exception of a few. Our study further shows that projects were effectively utilized. It is recommended that the communities should be involved in the maintenance of the projects.

Introduction
Prior to the mid 1980s, with the exception of oil, Nigeria demonstrated similar economic and institutional characteristics like other developing countries. Exports depended heavily on a small number of commodities and export taxes represented a significant portion of government revenues. Consequently, the Nigeria economy was in distress and poverty was wide-spread. In response, the Nigerian government like many African countries sought relief from creditors and donors such as the Breton-Woods Institutions (BWI), namely the International Monetary Fund (IMF) and the World Bank; and the European Union (EU), United Nations Children’s Fund (UNICEF), United National Development Programme, World Health Organization etc.

For example, the European Union funded Micro Projects Programme in six states of the Niger Delta (MPP6) successfully. Over the life span of the Programme from April 2003 until April 2008, MPP6 implemented over 1,900 micro-projects in the six beneficiary states of Abia, Akwa Ibom, Imo, Edo, Ondo and Cross River. With a total budget of 42 million Euros, or some 7 billion naira, MPP6 micro projects have benefited over 5 million people.

The MPP6 Programme worked directly with disadvantaged communities who decided on the type of micro projects with the highest priority. Project Implementation Committees formed by the communities implemented the micro-projects, with assistance from local Non-Governmental Organisations. To ensure
that micro-projects reflect their felt needs and for the community to maintain the micro-projects, communities had to contribute 25% of the cost of the micro-project (i.e. counterpart fund).

**Research Problem**

Rural development is considered as the process by which the majority of the people living in the rural areas are assisted in solving their problems and improving their living standard. Since the government alone is not able to solve these problems, NGO’s and the international organizations have taken it upon themselves to provide some of these basic amenities in order to raise the living standard of the grass-root people. Oftentimes sponsored projects are not accepted or utilized because they are not the needs of the people. Once completed the donor agencies and the government never border to get feed back if the objectives of their projects are realized.

However, considering the execution of these projects by international organizations the questions bordering our minds are how effective are these projects in solving the identified problems and improving the living standard of the people in rural area? How are these projects identified as the needs of the communities? Are they centrally located within the communities? Are they evenly distributed among the communities within the local government area? These are some of the questions this paper seeks to answer.

**Research Objectives**

The research objectives are as follow:

1. To examine how these projects were identified as felt needs within the communities,
2. to examine the distribution of these projects within the local government area and
3. to examine the functionality of these projects with a view to making appropriate recommendations for improvement of project implementation.

**Study Area**

Akoko South-West Local Government Area lies roughly between latitude 7° 20’N and 7° 30’N and longitude 5° 30’E and 5° 50’E (see fig 1). It is located on a dissected plateau and is made up of many undulating hills and valleys. It covers an area of about 30 square kilometers. The local government has a mean annual rainfall of 1,270mm and mean annual temperature of 21.1°C, which results in a very humid condition. Because of the favorable climatic condition, there is abundant vegetation cover. The local government is not blessed with enough fertile land because of the various hills and plateau that cover the whole area and this has generally affected the productive capacity of the people in agriculture. With a population of about 22,9486 according to 2006
population census, the study area is made up of more than 10 villages. About two third of the population is engaged in farming and most of the farmers are illiterate with very low income.

Because of the rural nature of the local government, Akoko South-West is one of the three (3) focal local government areas that UNICEF chose to sponsor projects in. In addition, Ondo state is one of the six states of the Niger Delta chosen by European Union (EU) for the micro-projects programme in rural areas and the local government is also one of the beneficiaries of these programmes. It becomes relevant then to examine the impact of these projects on the people.

**Methodology**

The primary data source for this study included data generated through the administration of questionnaires, field observation, and structured interviews. The target population of the research is made up of all the communities in Akoko South-West Local Government Area where these sponsored projects are available.

Akoko South-West Local Government Area is one of the focal Local Government of UNICEF. Two communities were chosen as their focal communities. These are Uba and Akowonjo.

The following are the projects sponsored by UNICEF from September 2005 to date.

- Establishment of early child care centers at both focal communities.
- Establishment of Health center at each of the focal communities.
- Provision of Hospital equipment and drugs to the Health centre.
- 28 furniture chairs, 7 round – table and snooze mat donated to the local government area.
- Drilling of three (3) boreholes at Uba and Abulenla/Akowonjo.
- Construction of VIP latrine projects in each of the focal communities.
- Establishment of model snailery projects in the two (2) focal communities.
- Sitting of Garri processing industry at Abulenla in Akowonjo (one of the focal communities).

While the notable projects embarked upon by European Union (MPP6) in Akoko South-West Local Government Area include the followings:

- Building of community Hall at Ikese-Oka.
- Building and equipping of Health Centre at Ikanmu, Oka – Akoko.
- Building and equipping of Health Center at Okia-Oka-Akoko.
- Building of Community Hall at Uba Oka.
Siting of bore-holes at Simerin-Oka, Owalusi, Akungba etc
Siting of palm oil processing industry at Ayegunle-Oka.

A total of 250 structured questionnaires were administered to both the stakeholders and the officials of these organizations. Seven communities were selected and questionnaires were administered proportionally according to their population.

**Conceptual Framework**

Among the relevant concepts pertinent to this study are the concepts of development (Sada, 1988; Mabogunje, 1980; Todaro, 1985) sustainable development (Elliot, 1999) human development (Sen, 1989), human development index (Sen, 1989), standard of living, the Millennium Development Goals (Lotse, 2006), quality of life (Nwagbara, 2003) concept of poverty (Okafor, 2005), concept of education (Okafor and Onokerhoraye, 1994) concept of empowerment (Sachs, 2005) the concept of infrastructure (Klugman, 2002), the concept of evaluation (Osamwonyi, 2006) etc.

**Results and Discussion**

Table 1. shows the 250 public respondents of which 30 reside in Ikese – Oka, 44 in Uba – Oka, 26 in Simerin, 30 in Akowonjo, 60 in Akusa (Akungba), 30 in Okia, and 30 in Owalusi.

**TABLE 1: Distribution of Respondents**

<table>
<thead>
<tr>
<th>Community</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ikese</td>
<td>30</td>
<td>12.0</td>
<td>12.0</td>
<td>12.0</td>
</tr>
<tr>
<td>UBA</td>
<td>44</td>
<td>17.6</td>
<td>17.6</td>
<td>29.6</td>
</tr>
<tr>
<td>Simerim</td>
<td>26</td>
<td>10.4</td>
<td>10.4</td>
<td>40.0</td>
</tr>
<tr>
<td>Akowonjo</td>
<td>30</td>
<td>12.0</td>
<td>12.0</td>
<td>52.0</td>
</tr>
<tr>
<td>Akusa/Akungba</td>
<td>60</td>
<td>24.0</td>
<td>24.0</td>
<td>76.0</td>
</tr>
<tr>
<td>Okia</td>
<td>30</td>
<td>12.0</td>
<td>12.0</td>
<td>88.0</td>
</tr>
<tr>
<td>Owalusi</td>
<td>30</td>
<td>12.0</td>
<td>12.0</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>250</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey, 2009
Table 2 reveals that of the 250 respondents, 154 are males 74 are females and 22 respondents did not respond to the question.

**Table 2 Ages of Respondents**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 25yrs</td>
<td>22</td>
<td>8.8</td>
<td>8.8</td>
<td>8.8</td>
</tr>
<tr>
<td>25-34yrs</td>
<td>47</td>
<td>18.8</td>
<td>18.8</td>
<td>27.6</td>
</tr>
<tr>
<td>35-44yrs</td>
<td>98</td>
<td>39.2</td>
<td>39.2</td>
<td>66.8</td>
</tr>
<tr>
<td>45-54yrs</td>
<td>41</td>
<td>16.4</td>
<td>16.4</td>
<td>83.2</td>
</tr>
<tr>
<td>55yrs and Above</td>
<td>19</td>
<td>7.6</td>
<td>7.6</td>
<td>90.8</td>
</tr>
<tr>
<td>No response</td>
<td>23</td>
<td>9.2</td>
<td>9.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>250</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey, 2009

Table 2 shows that 8.8% of the respondents are under 25yrs, 18.8% are between the ages of 25-34yrs, 39.2% are between the ages of 35-44yrs, 16.4% are between the ages of 45-54yrs, 7.6% are 55yrs and above; and 9.2% did not respond to the question.

**Table 3: Occupation of Respondents**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>23</td>
<td>9.2</td>
<td>9.2</td>
<td>9.2</td>
</tr>
<tr>
<td>Farmer</td>
<td>114</td>
<td>45.6</td>
<td>45.6</td>
<td>54.8</td>
</tr>
<tr>
<td>Trader</td>
<td>41</td>
<td>16.4</td>
<td>16.4</td>
<td>71.2</td>
</tr>
<tr>
<td>Civil servant</td>
<td>33</td>
<td>13.2</td>
<td>13.2</td>
<td>84.4</td>
</tr>
<tr>
<td>Others</td>
<td>16</td>
<td>6.4</td>
<td>6.4</td>
<td>90.8</td>
</tr>
<tr>
<td>No response</td>
<td>23</td>
<td>9.2</td>
<td>9.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>250</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey, 2009

Table 3 shows that 32 (9.2%) respondents are students, 114 (45.6%) farmers 41 (16.4%) are traders, 33 (13.2%) civil servants, 16 (6.4%) others were tailors, mechanics among others; and 23 (9.2%) did not respond to the question.
Table 4: Identification of Project as Needs

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>By individual</td>
<td>8</td>
<td>3.2</td>
<td>3.2</td>
<td>3.2</td>
</tr>
<tr>
<td>Community collectively</td>
<td>223</td>
<td>89.2</td>
<td>89.2</td>
<td>92.4</td>
</tr>
<tr>
<td>By International organization</td>
<td>15</td>
<td>6.0</td>
<td>6.0</td>
<td>98.4</td>
</tr>
<tr>
<td>No response</td>
<td>4</td>
<td>1.6</td>
<td>1.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>250</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey, 2009

Table 4 reveals that 3.2% of the total percentages of projects were identified by individual, 89.2% projects are identified by community collectively, 6.0% by international organization and 1.6% did not respond to the question.

Table 5: Project Finance

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jointly</td>
<td>231</td>
<td>92.4</td>
<td>92.4</td>
<td>92.4</td>
</tr>
<tr>
<td>Solely by international organizations</td>
<td>19</td>
<td>7.6</td>
<td>7.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>250</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey, 2009

Table 5 shows that 92.4% of the respondents were of the opinion that the projects were jointly financed while 7.6% said the projects are solely financed by international organizations.

Table 6: Impacts of Projects

<table>
<thead>
<tr>
<th></th>
<th>Health care centres</th>
<th>Boreholes</th>
<th>VIP Latrine</th>
<th>Model snailery</th>
<th>Garri processing industry</th>
<th>Community hall</th>
<th>Primary school</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income generation</td>
<td>.2</td>
<td>0.3</td>
<td>0.6</td>
<td>45.9</td>
<td>10.6</td>
<td>6.9</td>
<td>0.8</td>
</tr>
<tr>
<td>Improved welfare</td>
<td>27.6</td>
<td>11.1</td>
<td>24.3</td>
<td>-----</td>
<td>-----</td>
<td>28.5</td>
<td>48.0</td>
</tr>
<tr>
<td>Improved standard of living</td>
<td>16.5</td>
<td>19.7</td>
<td>31.4</td>
<td>-----</td>
<td>-----</td>
<td>22.2</td>
<td>27.6</td>
</tr>
<tr>
<td>Improved health</td>
<td>27.8</td>
<td>20.0</td>
<td>42.0</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
</tbody>
</table>
Table 7: Impact of Projects on Socio-Economic Life

<table>
<thead>
<tr>
<th></th>
<th>Observed N</th>
<th>Expected N</th>
<th>Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>228</td>
<td>125.0</td>
<td>103.0</td>
</tr>
<tr>
<td>No</td>
<td>22</td>
<td>125.0</td>
<td>-103.0</td>
</tr>
<tr>
<td>Total</td>
<td>250</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey, 2009

It was hypothesized that projects have no positive impact on the socio economic life of the people. The chi square result shows that the calculated $\chi^2$ (169.744) is greater than the table value (3.814). We therefore reject the null hypothesis. This therefore implies that there is a significant positive impact ($\alpha=0.05$) of projects on socio economic life of the people. This is basically due to the fact that the people were fully (89.2%) involved in identifying the projects as felt need.

In assessing the utility of projects it was hypothesized that there is no effective utilization of projects across study area.
Table 8: Effective Utilization of Projects

<table>
<thead>
<tr>
<th></th>
<th>Observed N</th>
<th>Expected N</th>
<th>Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>105</td>
<td>125.0</td>
<td>-20.0</td>
</tr>
<tr>
<td>No</td>
<td>145</td>
<td>125.0</td>
<td>20.0</td>
</tr>
<tr>
<td>Total</td>
<td>250</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey, 2009

\[ X^2 \text{cal} = 6.400 \]

The result of chi square test shows that the calculated \( X^2 \) (6.400) is greater than the table value (3.814), the null hypothesis is therefore rejected. This implies that there is effective utilization of the projects across study area. This result corresponds with the findings of Nigeria’s Community Development Program (CDP, 2001). In their findings, they pointed out that if only the rural people are consulted and carried along in the projects that will affect them; they will do all in their power to utilize effectively the facilities in their localities.

\( t\)-test was used to test the functionality of the projects across the study area. It was hypothesized that projects are not functional across study area.

Table 9 T-Test

<table>
<thead>
<tr>
<th>Test Value = 0</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Test Value = 0</td>
<td>Mean Difference</td>
</tr>
<tr>
<td></td>
<td>df</td>
</tr>
<tr>
<td>HEALTH CARE CENTRE</td>
<td>136.00</td>
</tr>
<tr>
<td>BOREHOLE</td>
<td>85.058</td>
</tr>
<tr>
<td>VIP LATRINE</td>
<td>39.827</td>
</tr>
<tr>
<td>MODEL SNAILERY PROJECT GARRI PROCESSING INDUSTRY</td>
<td>36.340</td>
</tr>
<tr>
<td></td>
<td>24.884</td>
</tr>
</tbody>
</table>

Source: field survey, 2009

Since the value is less than 0.05 it means that projects are functional across the study area.

Accessibility of projects was tested using t-test. It was hypothesized that projects are not accessible across the study area.
Table 10: t-test

<table>
<thead>
<tr>
<th>Project Description</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>95% Confidence Interval of the Difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH CARE CENTRE</td>
<td>39.652</td>
<td>129</td>
<td>.000</td>
<td>1.115</td>
<td>1.06 - 1.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOREHOLE</td>
<td>58.083</td>
<td>388</td>
<td>.000</td>
<td>1.219</td>
<td>1.18 - 1.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIP LATRINE</td>
<td>75.000</td>
<td>73</td>
<td>.000</td>
<td>1.014</td>
<td>.99 - 1.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MODEL SNAILERY PROJECT</td>
<td>75.000</td>
<td>73</td>
<td>.000</td>
<td>1.014</td>
<td>.99 - 1.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GARRI PROCESSING INDUSTRY</td>
<td>46.000</td>
<td>44</td>
<td>.000</td>
<td>1.022</td>
<td>.98 - 1.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUILDING OF COMMUNITY HALL</td>
<td>67.000</td>
<td>65</td>
<td>.000</td>
<td>1.015</td>
<td>.98 - 1.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td>3.000</td>
<td>1</td>
<td>.205</td>
<td>1.500</td>
<td>-4.85 - 7.85</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The value of the t-test result is less than 0.05, it therefore means that the null hypothesis is rejected and the alternative hypothesis is accepted. The implication is that the projects are accessible across the study area.

Summary

The study shows that projects were identified as needs within the communities. The rural people were consulted before the projects were commenced. This could be the reason for the effectiveness of the projects. The study also shows that one of the conditions attached to the projects is joint sponsorship. This implies that for any project to take place, the communities must also contribute their quota. This strategy made the community to see the project as theirs and hence, ensured the success. It was observed however that projects were not carried out directly by international organizations but through the local government officials with the attendant delays in execution.

In terms of distribution of projects within the local government area, the study shows that project were not evenly distributed within the local government area. This may be due to differences in the population across the local government area.

The study shows that projects are functional in general but individually some are not. For example 20.3% of boreholes are functional compared with the 79.7% of non functional boreholes. This shows a very low functionality ratio of the borehole projects across the local government area.
The result also shows that projects were effectively utilized. It was however observed that the level of utilization would have been higher were it not for poor maintenance culture on the part of the officials at the local government.

Conclusion

Evidences from this study have shown that considerable amount of resources have been invested in the provision of social amenities by the international organizations in the rural area of Akoko South Local Government Area with positive results. More of these projects are required in our rural areas in order to improve the standard of living of the people. However, there is the need for pragmatic approach to the establishment of projects and this can only be achieved if the people are involved i.e. community participation should be encouraged to ensure accessibility, functionality and effectiveness of the projects. Given the tremendous social impacts of these internationally sponsored projects, government should partner with international organizations for the funding of more people oriented projects or programmes in the rural areas and in the country as a whole.

Recommendations

Based on the findings drawn from this research the following recommendations are made in order to improve the impacts of sponsored projects in Akoko South-West Local Government Area.

1) More facilities should be provided to improve the lot of the rural people using the strategies of consultation and joint sponsorship. These strategies will make the people accept the project as theirs and so, give it maximum support.

2) Communities should report to local government officials when there are problems with projects. The communities should also be properly involved in the maintenance of these projects.

3) The local government should also put machinery in place to monitor projects form time to time. Government should also take it upon itself to repair non functional projects and make sure that they are in good condition.

4) The donor agencies should on their own, be involved in projects monitoring from time to time.

References


EFFECT OF INTEGRATED MODEL OF TEACHING ON STUDENTS RETENTION IN BIOLOGY

Carol. E. Chukwu

Abstract
The inability of Nigerian students to retain scientific knowledge/store information in mind worries the stakeholders in teaching and learning process and general public, attributing to teachers’ method and manner of imparting the knowledge among other factors. This study was, therefore, designed to investigate the effect of Integrated Model of Teaching on retention of Students’ in biology. The study was guided by two research questions and three null hypotheses. A quasi experimental non-equivalent control group design was used. 351 SS II biology students were drawn from a population of 1406 SSII Students of four selected schools in the study area. Multi-stage, stratified random sampling technique were used. Data Collection was made using Biology Teacher Made Retention Test (BTMRT). Reliability coefficient of 0.72 was established with Kudder Richardson formula 20 (K-R20). Mean (x) and standard deviation(s) were used to answer research questions while analysis of covariance was used to test hypotheses at 0.05 probability level.

Introduction
In this era of Science and Technological growth and development, many countries of world are struggling for science and Technological advancement. Nigeria is not left out of this race, that she has reflected this in her National Policy on Education FME (2004), where she made the study of sciences compulsory at all levels of Education. Nigeria has equally, some time now, pegged admission policy into her Polytechnics and Universities in Science and Technology programmes at 70% and 60% respectively. According to Fafuwa in Aniodoh (2004). “In the world of today, Science and technology have become dominant cultural factors any nation that is not alive to this fact is either dead or dying”. His view is that man requires knowing and practicing enough science and technology for self-survival, preservation, independent and development.

Good science teaching and technological advancement is however, based on the sound science education programme rooted in physics chemistry and biology, where foundation is laid in secondary schools. Unfortunately, the retention of students’ in science courses had remained poor for some decades. This affects their performance in the subjects in secondary schools levels as replied in literature Eze, (2002), Mbajirogu, (2002), WAEC, (2004) and Ogbu, (2005). One of the possible causes of Nigerian student’s poor retention in sciences is inability of mastering scientific concepts Adeyegbe (1993). Research in education on the quality of teaching and learning process is becoming increase.
because of its place in instructional delivery (Schiefele, Klaus-Peter and Krapp (1995), in Enugu (2007).

Therefore, to search for teaching method that can ensure students high understanding and retention of Science concepts is highly motivated, since conventional method have failed to help science student retain science concepts and facts. Hence, the move to search for intervention/innovative method of instruction-Integrated model of teaching. However, the common method of instruction applied by teachers in secondary schools in Nigeria is Lecture method which involves verbal presentation of subject matter/content. According to Aniodoh (2004) in Eze and Egbo, (2007), lecture method as conventional method, is didactic, stereotype and non-result oriented. It is often described as “talk and chalk” method because its presents information to the students who merely listen.

Integrated Model of teaching is an innovative instructional model which entails the combination of theory and practical activities at the same period of teaching and learning process. It can be described as teacher student centered instructional model since both participate actively in the teaching and learning process. According to Akubuilo, (2005), teaching is no longer restricted to teachers as encyclopedia of knowledge though it is a known fact that teachers play important role in any curriculum implementation. In using the model, the teacher teaches by integrating theory and practical activities. The model can go along way to enhance students’ retention ability in the subject.

Studies carried out so far in science on some innovative methods such as concept mapping Egbo, (2005), cooperative learning and concept mapping, Anidu, (2007), and Analog Model, Ugwu, (2007), revealed their efficacy in enhancing the students retention of biology concepts. Would the present study show the same trend? Some other studies also in retention focus on comparing gender retentive ability in science. Thus while some pointed out that male show more retentive ability, some revealed that female retain better than male. Which of this trend would the present study reveal? A major question therefore arises as to what will be the effect of Integrated Model of teaching on the retention of students in biology?

**Research Question**

1. What effects does the use of Integrated Model of Teaching (IMT) and Separatist Model of Teaching (SMT), have on SS II Students’ retention in biology?

2. How does the mean (x) retention scores of male students’ taught some biology topics compare with the mean (x) retention score of them female counterparts in BTMRT?
Effect of Integrated Model of Teaching on Students Retention in Biology

Hypotheses

Ho₁: The mean retention scores of SS II student who were taught some biology topics using IMT and SMT would not differ significantly (P< 0.05).

Ho₂: The mean (x) retention scores of SS II male and female students who were taught some biology topics with IMT and SMT would not differ significantly (P< 0.05)

Ho₃: The interaction effect of instructional method and gender on biology retention will not be significant (P< 0.05).

Method

Quasi experimental, pre-test post-test, non-equivalent control group research design was adopted in the study; which was carried out in Enugu East Local Government Area of Enugu Education Zone. There are nine School Secondary Schools in the Local Government Area with a total of one thousand, four hundred and six (1406) SSII biology students; that comprised the population for the study. A sample size 351 students were drawn from the population using multi-stage sampling technique, involving purposive, stratified random sampling techniques. Eight in-tact classes from four sampled (selected) schools were used.

Instrument for data collection was a biology teacher made retention test (BTMRT) developed by the researcher. It consists of fifty multiple choice retention test items and was validated by five experts in biology education. Reliability of the instrument was established using Kuder Richardson formular 20(K-R20), at the end of which a reliability index of 0.72 was obtained. The instrument was administered by the help of research assistance. First the pre-test, then post-test after treatment and two weeks later, the retention test to both IMT and SMT groups. Research questions were answered using mean and standard deviation while null hypothesis were tested using multiple classification analysis of covariance.

The decision rule was that any variable with mean score of 25 (x = or > 50%) was interpreted as high and any mean below 25 or x < 50% was regarded as low. For null hypotheses, if F-cal value was less than f_cv (F-cal < f-cv) at 0.05 level of significance, the null hypothesis is not rejected ie; upheld whereas it was not held (rejected) if F-cal > F-cv) at 0.05 level of significance.

Presentation of Results

The results of this work are presented in the table below in relations to the research questions and null hypotheses.

Research Question One

What effects do the use of Integrated Model of Teaching (IMT) and Separatist Model of Teaching (SMT) have on SSII retention?
Table 1: Mean (x) retention score and standard deviation of the two groups. N= 351.

<table>
<thead>
<tr>
<th>Group</th>
<th>Tests</th>
<th>Mean</th>
<th>Standard deviations</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>Retention</td>
<td>57.10</td>
<td>9.28</td>
<td>176</td>
</tr>
<tr>
<td>Control</td>
<td>Retention</td>
<td>44.87</td>
<td>7.05</td>
<td>176</td>
</tr>
</tbody>
</table>

The result in table 1 above revealed that experimental and control group obtained means (x) retention scores of 57.10 and 44.87 respectively. The result further showed that the IMT group differ from SMT groups in the mean (x) retention by 12.23, indicating that the IMT group (experimental) retained better than the SMT (control).

Research Question Two
How does the mean (x) retention score of male students’ taught some biology topics compare with their female counterpart in BTMRT.

Table 2: Mean (x) retention score obtained by male and female students in some biology topics N= 351.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Tests</th>
<th>Means</th>
<th>Standard deviations</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Post-BTMAT</td>
<td>51.71</td>
<td>10.29</td>
<td>171</td>
</tr>
<tr>
<td></td>
<td>BTMRT</td>
<td>49.46</td>
<td>10.69</td>
<td>171</td>
</tr>
<tr>
<td>Female</td>
<td>Post BTMAT</td>
<td>54.88</td>
<td>9.10</td>
<td>180</td>
</tr>
<tr>
<td></td>
<td>BTMRT</td>
<td>52.46</td>
<td>9.63</td>
<td>180</td>
</tr>
</tbody>
</table>

Table 2, above reveals that male and female students obtained a mean (x) retention scores of 49.46 and 52.46 respectively and a standard deviation of 10.69 and 9.63 respectively. The table equally, shows that the two mean (x) retention scores differ by three (3) marks in favour of female, an indication that female retain higher than male. However, such difference of 3 marks in minimal may be as a result of chance error.

Null Hypotheses
Ho₁: The mean (x) retention score of SSII students who were taught some biology topics with IMT and SMT would not differ significantly (P< 0.05).
Ho₂: The mean (x) retention scores of SSII male and female students who were taught some biology topics using IMT and SMT would not differ significantly (P< 0.05).
Ho₃: The interaction effect of instructional method and gender on biology retention will not be significant (P< 0.05).
**Effect of Integrated Model of Teaching on Students Retention in Biology**

Table 3: Analysis of covariance (ANCOVA) showing the main and 2-way interaction effects of instructional method and gender on students Retention in biology. N = 351.

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Square</th>
<th>Df</th>
<th>Mean Square</th>
<th>F-cal.</th>
<th>F-Cv significance</th>
<th>Decision Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covariates</td>
<td>20955.11</td>
<td>1</td>
<td>20955.11</td>
<td>3746.68</td>
<td>0.000</td>
<td>S\textsuperscript{xx}</td>
</tr>
<tr>
<td>Post BTMRT</td>
<td>20955.11</td>
<td>1</td>
<td>20955.11</td>
<td>3746.68</td>
<td>0.000</td>
<td>S\textsuperscript{xx}</td>
</tr>
<tr>
<td>Main Effects</td>
<td>559.99</td>
<td>2</td>
<td>279.99</td>
<td>50.06</td>
<td>0.000</td>
<td>S\textsuperscript{xx}</td>
</tr>
<tr>
<td>Gender</td>
<td>.275</td>
<td></td>
<td>.28</td>
<td>.05</td>
<td>0.825</td>
<td>NS\textsuperscript{xx}</td>
</tr>
<tr>
<td>Groups/Method</td>
<td>556.58</td>
<td>1</td>
<td>556.58</td>
<td>99.51</td>
<td>0.000</td>
<td>S\textsuperscript{xx}</td>
</tr>
<tr>
<td>2-way Interaction</td>
<td>2.65</td>
<td>1</td>
<td>2.65</td>
<td>.47</td>
<td>0.492</td>
<td>NS\textsuperscript{xx}</td>
</tr>
<tr>
<td>Gender method</td>
<td>2.65</td>
<td>1</td>
<td>2.65</td>
<td>.47</td>
<td>0.492</td>
<td>NS\textsuperscript{xx}</td>
</tr>
<tr>
<td>Explained</td>
<td>34888.83</td>
<td>4</td>
<td>8722.21</td>
<td>1559.49</td>
<td>0.000</td>
<td>S</td>
</tr>
<tr>
<td>Residual</td>
<td>1935.17</td>
<td>346</td>
<td>5.59</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>36824.00</td>
<td>351</td>
<td>105.21</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

S\textsuperscript{xx} = Significant at P< 0.05  
NS\textsuperscript{x} = Not significant at P> 0.05

For hypothesis I, table 3 shows that the calculated F-ratio (F-cal) due to instructional method is 99.51 while from the f-statistics table, the critical value (F-cv) at 0.05 probability level (1 and 346) degree of freedom is 0.000. F-cal (99.51) is thus greater than F-cv (0.000) at alpha level of 0.05. The decision is to reject the null hypothesis if the F-cal value exceed the F-cv value at a given probability level. The null hypothesis is thus rejected showing that students’ mean (x) retention scores depend on instructional method. This means that Integrated Model of Teaching enhances retention in biology.

In the case of hypothesis II table 3 reveals that F-cal due to gender is 0.049 where as the F-cv from F-statistics table, at 0.05 probability level (1 and 346) degree of freedom is 0.83. F-cal 0.49 is less than that F-cv which is 0.83 at 0.05 level of significant. Since F-cal is less than F-cv (0.049 and 0.83) respectively, the null hypothesis II is rather upheld, indicating that there is no significant difference in the mean (x) retention test scores of male and female students in biology or that gender has no effect on retention of students in biology. For hypothesis III, table 3 shows that F-cal and F-cv on the two (2)-way interaction effect of gender and instructional method are equally 0.47 and 0.49 respectively. F-cal (0.47) is also less than F-cv (0.49) the interaction between teaching method and gender on the students mean (x) retention in biology is upheld.
Summary of Findings
The major findings of the study were as follows:

1. That students’ retention in biology seem to depend on the instructional method.
2. That IMT group obtained higher retention scores than the SMT group.
3. That gender is not a factor on the retention of students in biology.
4. That instructional method and gender have joint effect on students’ retention in biology.

Discussion of the Findings
In the case of the issue in research question one, the finding reveals that instructional method has a significant main effect on the retention of students in biology. This finding supports what was earlier said by Ndukwe (1995) and Mbajiorgu (1995), that teachers’ instructional method can greatly affect students’ retention in biology. This is because the experimental groups were provided with opportunities to employ all their series in the learning process through practical activities, which enable them to retain more facts and concepts since retention implies remembering or ability to store information/knowledge for a long time. To support the above, Obodo (1997) and Urebu (1990) pointed out that poor learning and retention of science concepts may be related to inability of the students to link present learning with the previous knowledge. Supported this are Maduabum (1995) in Ugwu (2007) as well as Anidu (2007) who poised that students learnt best and retain most when the subject matter has meaning to them and when gives opportunity to interact with learning materials as provided by integrated model of teaching.

However, the two-way interaction effect of gender and method, as well as gender are do not affect students’ retention; though source of variance, main effect and method are significant the retention of facts in science. Thus study finally indicated that retention in science (biology) depends on the instructional model/method but independent on the gender of individuals concerned.

The relative superiority of IMT over the SMT in enhancing students’ retention could be attributed to the fact that as instructional model, IMT ensures active participation of students in the teaching and learning process. SMT Model often subjects student to the position of a passive recipients of facts handed down to them by the teacher. Therefore given this prevailing circumstances under which the two instructional models (experimental and control) are employed, it is not surprising that the experimental group retain better/more than the control groups in BTMRT.

Conclusion
From the results obtained in this study, it is concluded that IMT enhances more understanding and comprehension of biology concepts, principles and science process skill acquisition. The researcher therefore advocates for its use.
Effect of Integrated Model of Teaching on Students Retention in Biology

Recommendations

The following recommendations are made, in view of the finding of the study:

1. Government agencies and professional association who are in charge of designing and revising the curriculum for secondary schools should include and emphasize the use of IMT in teaching biology and other sciences.

2. Workshops and seminars should be organized by relevant professional bodies and government agencies to help educate teachers on the use of IMT in teaching and learning science subjects due to its relative newness to teachers and its efficacy in fostering learning.

3. Professional bodies like Science Teaching Association of Nigeria (STAN) examination bodies such as West African Examination Council (WAEC) and National Examination Council (NECO) should help to sponsor further research on the efficacy of IMT in promoting retention among the students in Nigerian secondary schools.

References


Akubuilo (2005), Teacher demographic factors as predicates of improvisation and utilization of instructional materials research. A journal of CUDIMAC, faculty of education UNN.


Aniodoh, H.C.O. (2004), History and philosophy of science; A comprehensive test on general studies for tertiary institutions. hacomfarm educational books.


Abstract

This paper discusses the use of the method of Centered Moving Average as a forecasting model for Hospital Management. The study demonstrated how Medical Directors can make future plans on hospital attendance and exercise control over their hospitals using Operations Research/Management Science (OR/MS) approach. The study recommendations encouraged hospitals, especially, private and government hospitals that have a sense of prompt and effective medical services to engage the services of Operations Research Professionals whose responsibility will be that of helping medical directors to manage hospital attendance using forecasting models. The study concluded with a note that, close monitoring in attendance can help the management of a hospital in planning and exercising control over the running of the hospital; particularly that, the management can use forecasts to make effective decisions affecting whether or not to employ more staff, provide more bed spaces and facilities or to order more drugs in advance.

Introduction

A major objective of OR/MS study is to enable the decision maker to make a better decision by identifying critical elements in the decision making process and providing courses of actions to be taken on those critical elements. A critical element in Hospital management is the ability of a Medical Director to make future plans (Forecasts) operationally, can greatly improve the performance/output of a hospital. Stevenson (2002) pointed out that, for a good forecast, the forecasting technique should be simple to understand and use. Stevenson further argued that, users often lack confidence in forecasts based on sophisticated techniques. They may not understand either the circumstances in which the techniques are appropriate or the limitations of the technique. Not surprisingly, fairly crude forecasting techniques such as intuitive forecasting enjoy widespread popularity because users are more comfortable working with them. However, this study presents a modest forecasting model with detailed explanation which Medical Directors can have confidence in and find it simple to use.

The Problem Situation

In 2009, Gal-Bose, a 32 Bed Capacity Private Hospital in Yola had Monthly Average Attendance of 609 Patients. It is on retainer-ship with over 16 private and corporate organizations and at least 2,000 enrollees from National Health Insurance Scheme (NHIS) apart from individuals and families who take...
their treatment with the Hospital. How to device future plans, therefore, become a critical question for Hospital Management. Hospitals, especially private hospitals like Gal-Bose and may be some Government hospitals which have a sense of Standard Health-Care Service Delivery; need OR/MS methods for planning well ahead of time. This will enable Medical Directors to make forecasts of the demand placed on their hospital and to exercise control over these hospitals which they manage. Thus, the problems tackled in this study were:

1. Development of a forecasting model that can make daily/weekly/monthly/quarterly forecasts possible.
2. Identify patterns in the hospital attendance.
3. Provide means for scanning the environment.
4. Alleviation of the stress (emotional, mental and physical) suffered by the Director and Pharmacist every time there is drug shortage or out of stock.

The Model

According to Stevenson (2002), A Moving Average forecast uses a number of the most recent actual data values in generating a forecast. The Moving Average forecast can be computed using the following equation:

\[ F_t = MA_n = \frac{\sum_{i=1}^{n} A_i}{n} \]

Where

\( i = \) An index that corresponds to periods

\( n = \) Number of periods (data points) in the moving average

\( A_i = \) Actual value in period \( i \)

\( MA = \) Moving Average

\( F_t = \) Forecast for time period

Data Collected for the Study

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<td>114</td>
<td>124</td>
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</tbody>
</table>
## Forecasting Model for Hospital Attendance Management

### Table 2. Weekly Hospital Attendance in 2008

<table>
<thead>
<tr>
<th>Week</th>
<th>Jan-08</th>
<th>Feb-08</th>
<th>Mar-08</th>
<th>Apr-08</th>
<th>May-08</th>
<th>Jun-08</th>
<th>Jul-08</th>
<th>Aug-08</th>
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<td>141</td>
<td>111</td>
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<td>114</td>
<td>109</td>
<td>107</td>
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<td>110</td>
<td>101</td>
<td>89</td>
<td>101</td>
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<td>134</td>
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<td>128</td>
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<td>96</td>
<td>91</td>
<td>95</td>
<td>138</td>
<td>125</td>
<td>115</td>
<td>99</td>
<td>139</td>
<td>98</td>
<td>69</td>
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<tr>
<td>5</td>
<td>94</td>
<td>132</td>
<td>101</td>
<td>78</td>
<td>125</td>
<td>92</td>
<td>116</td>
<td>114</td>
<td>81</td>
<td>155</td>
<td>101</td>
<td>79</td>
</tr>
</tbody>
</table>

### Table 3. Weekly Hospital Attendance in 2009

<table>
<thead>
<tr>
<th>Week</th>
<th>Jan-09</th>
<th>Feb-09</th>
<th>Mar-09</th>
<th>Apr-09</th>
<th>May-09</th>
<th>Jun-09</th>
<th>Jul-09</th>
<th>Aug-09</th>
<th>Sep-09</th>
<th>Oct-09</th>
<th>Nov-09</th>
<th>Dec-09</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>110</td>
<td>137</td>
<td>166</td>
<td>90</td>
<td>100</td>
<td>121</td>
<td>151</td>
<td>138</td>
<td>114</td>
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<td>2</td>
<td>135</td>
<td>118</td>
<td>120</td>
<td>94</td>
<td>84</td>
<td>114</td>
<td>138</td>
<td>121</td>
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<td>138</td>
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<td>4</td>
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<td>116</td>
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<td>133</td>
<td>105</td>
<td>92</td>
<td>107</td>
<td>95</td>
<td>93</td>
</tr>
<tr>
<td>5</td>
<td>159</td>
<td>155</td>
<td>155</td>
<td>94</td>
<td>106</td>
<td>89</td>
<td>191</td>
<td>160</td>
<td>183</td>
<td>156</td>
<td>78</td>
<td>31</td>
</tr>
</tbody>
</table>

### Table 4. Weekly Hospital Attendance in Jan 2010

<table>
<thead>
<tr>
<th>Week</th>
<th>Jan-2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>95</td>
</tr>
<tr>
<td>2</td>
<td>85</td>
</tr>
<tr>
<td>3</td>
<td>84</td>
</tr>
<tr>
<td>4</td>
<td>103</td>
</tr>
<tr>
<td>5</td>
<td>80</td>
</tr>
</tbody>
</table>

**Note:** Generally speaking, there are 4 weeks in a month. However, most times a month starts or ends some where in the middle of the week; making 5 week-lines on the calendar. In cases where we had 6 week-lines on the calendar, we added the days either of the first line to the second week-line, or of the last line to the fifth week-line depending on which line had fewer days; which were mostly 1 or 2 days. This had no consequence on our calculations since our interest was monthly forecasts; it still gave us the same monthly totals.
Historical Data

These historical data, Tables 1 to 6, gives much insight about the number of patients that come to the Hospital. It also gives information about the pattern of attendance.

Seasonality

Seasonal Variations in time series data are regularly repeating movements in series values that can be tied to recurring events (Stevenson, 2002). Stevenson further argues that, seasonal variation is also applied to daily, weekly, monthly and other regularly recurring patterns in data. From Figure 1, Seasonality might be observed in the Monthly Attendance for 2007, 2008 and 2009. There is a rise in attendance for the months of February, July and October. However, in the Months of April, August and December, a decrease in attendance is observed.

Table 5. Monthly Attendance for the Years 2007, 2008 and 2009

<table>
<thead>
<tr>
<th>Month</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>429</td>
<td>656</td>
<td>654</td>
<td>447</td>
</tr>
<tr>
<td>Feb</td>
<td>463</td>
<td>601</td>
<td>644</td>
<td>XXX</td>
</tr>
<tr>
<td>Mar</td>
<td>472</td>
<td>528</td>
<td>710</td>
<td>XXX</td>
</tr>
<tr>
<td>Apr</td>
<td>458</td>
<td>462</td>
<td>491</td>
<td>XXX</td>
</tr>
<tr>
<td>May</td>
<td>435</td>
<td>536</td>
<td>553</td>
<td>XXX</td>
</tr>
<tr>
<td>Jun</td>
<td>433</td>
<td>587</td>
<td>597</td>
<td>XXX</td>
</tr>
<tr>
<td>Jul</td>
<td>504</td>
<td>632</td>
<td>717</td>
<td>XXX</td>
</tr>
<tr>
<td>Aug</td>
<td>430</td>
<td>574</td>
<td>620</td>
<td>XXX</td>
</tr>
<tr>
<td>Sep</td>
<td>467</td>
<td>541</td>
<td>642</td>
<td>XXX</td>
</tr>
<tr>
<td>Oct</td>
<td>545</td>
<td>689</td>
<td>624</td>
<td>XXX</td>
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<tr>
<td>Nov</td>
<td>546</td>
<td>533</td>
<td>538</td>
<td>XXX</td>
</tr>
<tr>
<td>Dec</td>
<td>574</td>
<td>477</td>
<td>513</td>
<td>XXX</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Quarter</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Quarter</td>
<td>1364</td>
<td>1785</td>
<td>2008</td>
</tr>
<tr>
<td>2nd Quarter</td>
<td>1326</td>
<td>1585</td>
<td>1641</td>
</tr>
<tr>
<td>3rd Quarter</td>
<td>1401</td>
<td>1747</td>
<td>1979</td>
</tr>
<tr>
<td>4th Quarter</td>
<td>1665</td>
<td>1699</td>
<td>1675</td>
</tr>
</tbody>
</table>
Model Application

The seasonality in our data (See Figure 1) leads us to the choice of the Method of Centered Moving Average as a more appropriate technique for analysis. Other models such as Weighted Moving Average and Exponential Smoothing can also handle such Time Series analysis; however, Centered Moving Average is preferred by the researchers.

Advantages of Centered Moving Average
1) Centered Moving Average is useful in obtaining representative values because, by virtue of its centered position – it looks forward and looks backward - it is able to closely follow data movement whether they involve trends, cycles or random variability alone (Stevenson, 2002)
2) Centered Moving Average is most representative of the corresponding time point in the series (Stevenson 2002).
3) The resulting values in Centered Moving Average are associated with a time point rather than the mid-point of the interval between two successive time points (http://itl.nist.gov/ engineering stat handbook)
4) Centered Moving Average is useful in measuring the seasonal variations (Robert, 1990)
5) Centered Moving Average smooth out short-term fluctuations in data (Robert, 1990)
6) Centered Moving Average employs the most recent observations to calculate an average, using the result as the forecast for the next period (Stevenson, 2002)

**Disadvantages of Centered Moving Average**

1) The trend does not have figures for all period because we lose 6 points at each end. According to Freund and Williams (1992), the missing values at the beginning and at the end of artificial series are characteristic of moving averages of this sort; we lose one value at each end for a three-year moving average, two for a five-year moving average, three for a seven-year moving average and so on. This is often of no consequence. Thus, the 6 months lost, as in our case (see Table 11), has no consequence.

2) Each trend figure is calculated over a limited number of periods and all earlier data is ignored (http://www.mathyards.com)

3) The method requires that we choose a suitable period as a basis for calculation, which is not always self-evident (http://www.mathyards.com).

In spite of the above disadvantages, Centered Moving Average is still preferred because of its dominating advantages. Since the number of periods needed in a Centered Moving Average must be equal to the number of “seasons” involved, a 12-period moving average is needed with monthly data as in our case (See Table 11).

**Table 11 12-Point Moving Average and Seasonal Relatives.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Months</th>
<th>Actual Attendance</th>
<th>MA_{12}</th>
<th>CMA_{12}</th>
<th>Seasonal Relatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>Jan-07</td>
<td>429</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Feb-07</td>
<td>463</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mar-07</td>
<td>472</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Apr-07</td>
<td>458</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>May-07</td>
<td>435</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jun-07</td>
<td>433</td>
<td>479.6667</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jul-07</td>
<td>504</td>
<td>489.1250</td>
<td>1.030411</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aug-07</td>
<td>430</td>
<td>498.5833</td>
<td>0.852611</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>510.0833</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Forecasting Model for Hospital Attendance Management

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Actual Attendance</th>
<th>MA&lt;sub&gt;12&lt;/sub&gt;</th>
<th>CMA&lt;sub&gt;12&lt;/sub&gt;</th>
<th>Seasonal Relatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>Sep-07</td>
<td>467</td>
<td>514.7500</td>
<td>512.4167</td>
<td>0.911368</td>
</tr>
<tr>
<td></td>
<td>Oct-07</td>
<td>545</td>
<td>515.0833</td>
<td>514.9167</td>
<td>1.058424</td>
</tr>
<tr>
<td></td>
<td>Nov-07</td>
<td>546</td>
<td>523.5000</td>
<td>519.2917</td>
<td>1.051432</td>
</tr>
<tr>
<td></td>
<td>Dec-07</td>
<td>574</td>
<td>536.3333</td>
<td>529.9167</td>
<td>1.083189</td>
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<tr>
<td></td>
<td>Jan-08</td>
<td>656</td>
<td>547.0000</td>
<td>541.6667</td>
<td>1.211077</td>
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<td>553.0000</td>
<td>1.086799</td>
</tr>
<tr>
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<td>528</td>
<td>562.0833</td>
<td>562.0833</td>
<td>0.939362</td>
</tr>
<tr>
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<td>Apr-08</td>
<td>462</td>
<td>571.1667</td>
<td>571.1667</td>
<td>0.808871</td>
</tr>
<tr>
<td></td>
<td>May-08</td>
<td>536</td>
<td>576.6250</td>
<td>576.6250</td>
<td>0.929547</td>
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<td></td>
<td>Jun-08</td>
<td>587</td>
<td>572.0417</td>
<td>572.0417</td>
<td>1.026149</td>
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<td>Jul-08</td>
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<td>567.9167</td>
<td>567.9167</td>
<td>1.112839</td>
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<tr>
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<td>Aug-08</td>
<td>574</td>
<td>569.6250</td>
<td>569.6250</td>
<td>1.00768</td>
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<tr>
<td></td>
<td>Sep-08</td>
<td>541</td>
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<td>579.0000</td>
<td>0.93437</td>
</tr>
<tr>
<td></td>
<td>Oct-08</td>
<td>689</td>
<td>587.7917</td>
<td>587.7917</td>
<td>1.172184</td>
</tr>
<tr>
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<td>Nov-08</td>
<td>533</td>
<td>589.7083</td>
<td>589.7083</td>
<td>0.903837</td>
</tr>
<tr>
<td></td>
<td>Dec-08</td>
<td>477</td>
<td>590.4167</td>
<td>590.4167</td>
<td>0.807334</td>
</tr>
<tr>
<td>2009</td>
<td>Jan-09</td>
<td>654</td>
<td>594.7917</td>
<td>594.7917</td>
<td>1.099545</td>
</tr>
<tr>
<td></td>
<td>Feb-09</td>
<td>644</td>
<td>600.2500</td>
<td>600.2500</td>
<td>1.072886</td>
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<td>Mar-09</td>
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<td>606.3750</td>
<td>606.3750</td>
<td>1.170893</td>
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<td>Apr-09</td>
<td>491</td>
<td>607.0189</td>
<td>607.0189</td>
<td>0.808871</td>
</tr>
</tbody>
</table>
Note

MA_{12} = 12-Point Moving Average of the Attendance

CMA_{12} = Centered Moving Average of 12; Whenever an even-numbered moving average is used as a Centered Moving Average (e.g. MA_4, MA_6, MA_8, …), the center is not obvious; hence, a second Moving Average – a two-point Moving Average is used to achieve correspondence with period. This procedure is not needed when the number of periods in the Centered Moving Average is odd (e.g. MA_3, MA_5, MA_7 …) (Aczel, 1999; Andre, 2004; Kress, 1994; Stevenson, 2002)

Seasonal Relatives = Monthly Attendance ÷ CMA_{12}: “This is percentage of Average. The Seasonal percentages in the multiplicative model are referred to as Seasonal Relatives or Seasonal Indexes” (Stevenson, 2002). According to Freund and Williams (1992), Seasonal Relatives is the measure of movements in a time series which recur more or less regularly in the same months of successive year. For example, In Table 4.10, the Seasonal Relative for July 2007 is 1.03 approximately. This indicates that, Hospital Attendance for July 2007 was 3 percent above the monthly average. A seasonal Relative of 0.85 as in August 2007 indicates that, the Hospital Attendance in August 2007 was 15 percent below the monthly average.

Deseasonality

To deseasonalise data is to remove the seasonal component from the data in order to get a clearer picture of the non-seasonal (e.g. Trend) component (Armstrong, 2001; Brooks, 1974; Nicholas, 1998; Stevenson, 2002). This is done as follows:
**Forecasting Model for Hospital Attendance Management**

**First:** Standardize the seasonal relatives of each month (see Table 12). The Standardized Seasonal Relatives (S.R), also known as Adjusted S.R, is obtained by multiplying each of the month’s average by 12/ (total of average S.R.). The standardized seasonal relatives must be adjusted so that they equal to 12 (12 months, the number of periods).

**Table 12  Average and Standardized Seasonal Relatives**

<table>
<thead>
<tr>
<th>Months</th>
<th>Monthly S.R.</th>
<th>Total</th>
<th>Ave S.R.</th>
<th>Standardized S.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>1.2111+1.0995 = 2.3106</td>
<td>1.1553</td>
<td>1.15625</td>
<td></td>
</tr>
<tr>
<td>Feb</td>
<td>1.0868+1.0729 = 2.1597</td>
<td>1.0799</td>
<td>1.08074</td>
<td></td>
</tr>
<tr>
<td>Mar</td>
<td>0.9394+1.1709 = 2.1103</td>
<td>1.0551</td>
<td>1.05602</td>
<td></td>
</tr>
<tr>
<td>Apr</td>
<td>0.8089+0.8089 = 1.6178</td>
<td>0.8089</td>
<td>0.80957</td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>0.9295+0.9148 = 1.8443</td>
<td>0.9222</td>
<td>0.92291</td>
<td></td>
</tr>
<tr>
<td>Jun</td>
<td>1.0261+0.9858 = 2.0119</td>
<td>1.0060</td>
<td>1.00683</td>
<td></td>
</tr>
<tr>
<td>Jul</td>
<td>1.1128+1.0304 = 2.1432</td>
<td>1.0716</td>
<td>1.07248</td>
<td></td>
</tr>
<tr>
<td>Aug</td>
<td>1.0077+0.8526 = 1.8603</td>
<td>0.9302</td>
<td>0.93091</td>
<td></td>
</tr>
<tr>
<td>Sep</td>
<td>0.9344+0.9114 = 1.8458</td>
<td>0.9229</td>
<td>0.92366</td>
<td></td>
</tr>
<tr>
<td>Oct</td>
<td>1.1722+1.0584 = 2.2306</td>
<td>1.1153</td>
<td>1.11622</td>
<td></td>
</tr>
<tr>
<td>Nov</td>
<td>0.9038+1.0514 = 1.9552</td>
<td>0.9776</td>
<td>0.97840</td>
<td></td>
</tr>
<tr>
<td>Dec</td>
<td>0.8073+1.0832 = 1.8905</td>
<td>0.9453</td>
<td>0.94603</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11.9902</td>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note

**Standardized Seasonal Relatives** = \( \frac{\text{Average Seasonal Relative} \times 12 \text{ Months}}{\text{Total Average Seasonal Relatives}} \). The Standardized Seasonal Relative provides an estimate of the true seasonal relative for each month (http://www.mathyards.com)

**Second:** Deseasonalize the data by dividing actual data (attendance) for each month by its standardized S.R. that is, Actual Data ÷ Standardized Seasonal Relatives. (See Table 13).

**Table 13. Deseasonalised Data in 2007, 2008 and 2009**

<table>
<thead>
<tr>
<th>Months</th>
<th>Actual Attendance (X)</th>
<th>Standardized S.R (T)</th>
<th>Deseasonalized Data (X/T)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2007</td>
<td>2008</td>
<td>2009</td>
</tr>
<tr>
<td>Jan</td>
<td>429</td>
<td>656</td>
<td>654</td>
</tr>
<tr>
<td>Feb</td>
<td>463</td>
<td>601</td>
<td>644</td>
</tr>
<tr>
<td>Mar</td>
<td>472</td>
<td>528</td>
<td>710</td>
</tr>
</tbody>
</table>
The management of the hospital can study the Trend in Figure 2 to identify the underlining factors to see whether they can consistently achieve an upward movement in the Hospital Attendance.

**Forecasting**

Develop a 12-month forecast (based on the number of periods) for 2010 using a 12-Month Moving Average based upon the centered moving average attendance series (CMA_{12}). First, you will have to “fill in” the data for the months of July – December 2009 in Table 11. Just make each of these months the average of the previous 12 months (see Table 14).

Continue this method to make your forecasts for the months of January through December, 2010 (see Table 15). Note that you will be using some of your early forecasts as the basis for your later forecasts. ([http://www.mathyards.com/ise/mm](http://www.mathyards.com/ise/mm)).
### Table 14. Filling the Lost Points at the end of Table 11

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Actual Data</th>
<th>CMA12</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>Jul-08</td>
<td>632</td>
<td>567.9167</td>
</tr>
<tr>
<td></td>
<td>Aug-08</td>
<td>574</td>
<td>569.6250</td>
</tr>
<tr>
<td></td>
<td>Sep-08</td>
<td>541</td>
<td>579.0000</td>
</tr>
<tr>
<td></td>
<td>Oct-08</td>
<td>689</td>
<td>587.7917</td>
</tr>
<tr>
<td></td>
<td>Nov-08</td>
<td>533</td>
<td>589.7083</td>
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<tr>
<td></td>
<td>Dec-08</td>
<td>477</td>
<td>590.8333</td>
</tr>
<tr>
<td>2009</td>
<td>Jan-09</td>
<td>654</td>
<td>594.7917</td>
</tr>
<tr>
<td></td>
<td>Feb-09</td>
<td>644</td>
<td>600.2500</td>
</tr>
<tr>
<td></td>
<td>Mar-09</td>
<td>710</td>
<td>606.375</td>
</tr>
<tr>
<td></td>
<td>Apr-09</td>
<td>491</td>
<td>607.0189</td>
</tr>
<tr>
<td></td>
<td>May-09</td>
<td>553</td>
<td>604.5189</td>
</tr>
<tr>
<td></td>
<td>Jun-09</td>
<td>597</td>
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</tr>
<tr>
<td></td>
<td>Jul-09</td>
<td>717</td>
<td>591.9511</td>
</tr>
<tr>
<td></td>
<td>Aug-09</td>
<td>620</td>
<td>593.9539</td>
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<td></td>
<td>Sep-09</td>
<td>642</td>
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<tr>
<td></td>
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<td>624</td>
<td>597.3965</td>
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<tr>
<td></td>
<td>Nov-09</td>
<td>538</td>
<td>598.1968</td>
</tr>
<tr>
<td></td>
<td>Dec-09</td>
<td>513</td>
<td>598.9042</td>
</tr>
</tbody>
</table>
**Note:** The CMA_{12} for July 2009 is the average of the previous 12 months from July 2008 to June 2009. That of August 2009 is the average of the previous 12 months from August 2008 to July 2009, and so on.

Table 15: Monthly Forecasts for 2010

<table>
<thead>
<tr>
<th>Month</th>
<th>CMA12 (C)</th>
<th>Standardized S.R (S)</th>
<th>2010 Forecast (C*S)</th>
<th>2010 Actual Attendance (T)</th>
<th>Forecast Accuracy (T - (C*S))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>603.0896</td>
<td>1.1562</td>
<td>697</td>
<td>447</td>
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<tr>
<td>Feb</td>
<td>603.8440</td>
<td>1.0807</td>
<td>653</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar</td>
<td>604.2034</td>
<td>1.0560</td>
<td>638</td>
<td></td>
<td></td>
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<tr>
<td>Apr</td>
<td>603.9621</td>
<td>0.8096</td>
<td>489</td>
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<td></td>
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<tr>
<td>May</td>
<td>603.5800</td>
<td>0.9229</td>
<td>557</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jun</td>
<td>603.4459</td>
<td>1.0068</td>
<td>608</td>
<td></td>
<td></td>
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<tr>
<td>Jul</td>
<td>603.0896</td>
<td>1.0725</td>
<td>647</td>
<td></td>
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<tr>
<td>Aug</td>
<td>603.0896</td>
<td>0.9309</td>
<td>561</td>
<td></td>
<td></td>
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<td>Sep</td>
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<td>0.9237</td>
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<td>Dec</td>
<td>603.0896</td>
<td>0.9460</td>
<td>571</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The CMA_{12} for January 2010 is the average of the 12 months from January to December 2009, in Table 14. That of February 2010 is the average of the 12 months from February 2009 to January 2010, and so on.

**Interpretation of Model Application**

The forecast for a particular period (month) is obtained by multiplying the Centered Moving Average for the particular period (month) by the Standardized Seasonal Relative for the period (month). See Table 15. the reason for this is to re-seasonalize the forecast so as to become more real. In other words, 2010 forecast in Table 15 is a re-seasonalized data which has already been deseasonalized to some extent by reason of centered moving averages. Centered moving averages reduce seasonal fluctuations, thus, they are called Trend Values in some literatures. Once seasonal fluctuations are removed from data, what remains is the trend. According to Stevenson (2002), Trend is a long-term upward or downward movement in data.

A forecast for the next year (e.g. 2011) will be made once actual data for a particular year (e.g. 2010) is obtained at the end of the year. In actual terms, the more number of Monthly Seasonal Relatives we have, the better our forecast will be. We hope for a much better forecast when more data is added to the available three year data.
Forecasting Model for Hospital Attendance Management

An example, the actual attendance in January for the 3 years is as follows:

January 2007  429  
January 2008  656  
January 2009  654.

Our model made a forecast of 697 people in attendance for January 2010. The actual attendance recorded for the month (January 2010) was 447. A forecast error of -250 was recorded. This has nothing to do with the trust-worthiness of our model. The reason for the massive disparity between our forecast and the actual attendance is likely because the Principal Doctor, Dr. Jalal Saleh has been away from December 2009 till date (8th February 2010). Attendance generally decline once the Principal Doctor is not available for consultations.

Conclusion

Close monitoring in attendance can help the management of a hospital in planning and exercising control in the running of the Hospital. The management can use forecasts to make decisions affecting whether or not the hospital should do the following and much more:

1. Employ more staff to cope with the expected increased attendance
2. Provide more bed spaces
3. Provide more facilities
4. Order for more drugs
5. Expand or relocate if the space cannot accommodate the hospital in the near future
6. Know how well or bad the hospital is performing.

Recommendations

Based on the findings from the study, we recommended that, Gal-Bose hospital should

1. Work with the Forecast of 2010 that is made in this study.
2. Investigate the unusual decrease in attendance in January 2010 and treat it accordingly
3. Study the Monthly performance of the Hospital Attendances for 2007, 2008 and 2009 (See Table 5), to discuss how best to improve the performance of the hospital. New graphs can be created on other indices such as number of Births, Deaths, Admissions and so on to ensure proper management and control of the hospital.
Employ an Operations Research graduate who will be saddled with the responsibility of handling database issues which include forecasting, and helping other hospital staff to up-date their information while they are trying to become proficient in the use of the new computerized system.

References


http://www.mathyards.com
http://itl.nist.gov


BUSINESS EDUCATION AS A PIVOT FOR JOB CREATION FOR SUSTAINABLE DEVELOPMENT IN NIGERIA

Loretta Ukamaka Egwuelu-Osayede

Abstract

The National Policy on Education (2004) sees Vocational Education as the corner-stone on which Nigeria should rely to provide her youths the opportunities to train, develop skills, abilities and work habit to equip them for useful employment and trades. If business education is rightly handled by all the tiers of government, it can stimulate our youths, no matter the ethnic group affiliation into studying business education, as a business education prepares them for employment. This would invariably promote the much-needed sustainable development, as Business education graduates should be able to pick up jobs or create jobs in various areas in the country. This paper tries to examine some prospects that can enhance our economy. Finally, recommendation are made for possible solution. Vocational education is an umbrella of business education and can be made available only for those who need it, because they are interested in it and also hope to progressively in it.

Introduction

Business education is an aspect of vocational education that equips individuals with the necessary skills and theoretical knowledge needed for performance in the business world either for job creator or for self employment. Ntibi (1996) viewed self-reliance as the capacity to rely on one’s own capabilities, efforts and resources, to set up his own business and become self-employed and be job creators to others. Business education is one of the vocational education programmes which offer training for job creation. Being a job creator entails more than acquisition of knowledge and skills in production and services. This will help an individual to manage a business venture and progress in it, and also able to provide employment opportunities for others to participate in it.

One of the goals of vocational education as stated in the National Policy on Education (Federal Republic of Nigeria, 1998) is to give training and impart the necessary skills to individuals who shall be self-reliant economically. Also one of the objectives for Business education programme is to produce young men and women who would be able make useful living for themselves. Igbinoba (2000) realized that this objective has not gone beyond the hope expressed on paper. A look at the curriculum content of secondary school in Nigeria reveals that business studies is taught basically as a theoretical subject. Emphasis is not on practice as it ought to be. The National Policy on Education (1998) states that the federal government of Nigeria has adopted education as an instrument per
excellence for effecting National development. Higher Education occurs at post-
secondary level and is given in the universities, polytechnics colleges of
technology, colleges of education and advanced teacher training colleges. Higher
education according to National Policy on Education page 22 should aim at:
(a) The acquisition, development and inculcation of the proper value
orientation for the survival of the individual and society
(b) The development of the intellectual capacities of individual in
understand and appreciate their environment
(c) The acquisition of both physical and intellectual skills which will enable
individual to develop into useful member of the community.
(d) The acquisition of an objective view of the local and external
environment.
These human resources from higher education that are trained which
exploit individual expertise and eventually transform society and a nation in
general.

Business education is one of the major career being offered as a course
in higher education. Business education is a major area for self employment
opportunities. These courses are offered in business education.

(1) **Accounting**: This course concerns preparing accounting information
such as ledger accounts, account from the vouchers, cash books, wages
and salaries, control account auditing, trading and profit account, balance
sheet etc

(2) **Business Management**: The entrepreneur beneficiary who is managing
his business able to use managerial functions like planning, organizing,
staffing, directing, controlling and decision making as tools for achieving
some economic growth. It also includes self-management skills like
personality traits such as patience, honesty, hardworking, punctuality,
dependability, accountability, responsibility, risk taking, initiative,
perseverance, resourcefulness and motivation example Hotel
management, decoration services and school proprietors

(3) **Marketing**: This entails the buying and selling of goods and services
including advertising and sales promotion. Many graduates find good
occupations in this segment of vocational education. They buy goods
from production areas or producer and sell in other areas of demand.
What are needed in buying and selling include capital (cash), good
transportation system, warehousing, shops, the possession of
entrepreneurial and business management skills. Examples are trading in
motor-spare parts, food stuffs, importer and exporter being engaged in
petroleum products distribution, drinks and beverages, bookshop
management, furniture making and marketing.

(4) **Secretarial studies or administration**: Many trained secretaries can be
self-employed by setting up their own secretarial services popularly
known as “Business centre” in Nigeria. These job creators normally
employed people to help them managed their business centres. The entrepreneur should be able to raise some initial capital to purchase some machines, (copiers, photocopiers) and other facilities. The concept of creativity could be seen as a set of principles and ideology, a method or technique, an objective or goal, a strategy or even a theory of development. It involves having power to create jobs through one’s own capabilities, intelligence judgment, resources, skills in a bid to enhance sustainable development in the economy.

In an inter-dependent world, job creation implies that a nation depends on its human and material resources to create most of basic needs of its citizens. A developed nation refers to a nation’s determination to rely on the utilization of domestic resources to produce most of its required goods and services.

This refers to effort to mobilize hitherto unutilized resources capable of producing required goods and services as contrasted with an open door policy which allows expressive imports of goods and services.

Vocational Education is very relevant in our situation for according to Nwagwugwu (1991) quoting president John of USA. “The war on poverty and ignorance is not struggle simple for opportunity. Our fight against poverty and ignorance will be an investment in the most valuable of our resources – the skill’s knowledge and strengths of our people. In future, as in the past, this investment will return its cost many folds to our entire economy, giving new opportunity to those who have little or nothing”. It is now the federal government policy to use the colleges of education, polytechnics, universities in the country as basis for training first generation entrepreneurs in collaboration with the commonwealth industrial training experience programme (CITEP) – of London and the commonwealth association of polytechnics in Africa (CAPA) because all the programmes she embarked upon previously to, make her citizens self-reliant side-tracked tertiary institutions (federal ministry of education 2006).

**Qualities of an Entrepreneur**

Entrepreneur possess self-employment skills. Self-employment skills are tools provided by business education to enhance, sustainable development. Every child that has gone through Business education training is ready to be self employed and become an employer of other people as well.

Jonnes (1994) stressed that enthusiasm, common sense, honesty and hard work constitute the business elements, which make a self employed individual to grow in business.

Other factors are:

(i) Punctuality at work
(ii) Cordial relationship with customers to know their needs and complains of quality of goods and services
(iii) Good concentration in serving customers
(iv) Avoid criticizing other competitors
Avoid alcohol consumption during business hour

Avoid womanizing because it is a loophole in one’s life, which encourages wastage of time, money, energy and eventual loss of concentration in business.

Avoid cheating, stealing and supplying of inferior goods, especially to customers.

Imbibe time management because, time is money never over look time.

Keep a good financial record by review spending.

Cultivate a regular habit of an efficient use of a bank account for the business.

Eat a well balanced healthy diet.

Avoid drug abuse. Always seek the Doctor’s advice.

Accept criticism from customers with open mind for correction.

Prospect of Business Education

1. Encouragement of indigenous technology: It will assist the country to develop her own technology rather than marketing imported goods. Importantly, it will influence industrial growth, expansion in the various careers of vocational education and its eventual susstenance. The initial industrial growth and efforts may result in imitation or adaptation but at the long run, Nigeria will be able to develop her own technology and even compete favourably with the production of other countries like that of Taiwan China, India, Japan and so on.

2. Bridging the gap between theory and practical work: Professional business education teacher is able to use his ability to demonstrate his skills to his students. If the laboratories (shorthand, typing pool) and internet laboratories are well equipped with automated modern machines. Students will be exposed to changes and innovations in machines, computer, office machines and equipment in the model executive office. They will easily fit in and manage their own offices after graduation.

3. Providing the enabling environment as a matter of necessity: Business education readily provides knowledge, skills, attitude for job creation. This is the reason why the federal, state and local governments in Nigeria should provide as a matter of urgency; the political will for the proper implementation.

Recommendation

In order to encourage sustainable development through the study of business education in our educational institutions the following recommendations are made:

1. Adequately fund should be made available to our institutions to purchase the right equipment and facilities in order to enhance the study of business education. This would ensure the provision of typewriters,
Business Education as a Pivot for Job Creation for Sustainable Development in Nigeria

computers, tape-recorder, microphone, accounting machine, ear-phone, office equipment (filing and cabinets), stop watches, audio typing machines, stand by generator, copiers, scanning machines, data processing systems, mailing equipment and machines (franking machine, postage machines, folding machines, inserting machine, collator, sealing machine, letter opening machine, shredding machine), tele-fax machine and different mobile phones etc.

2. Government should always implement policies and agreement reached with tertiary institution trade unions so that incessant strikes could be avoided.

3. Lecturers in tertiary institutions should be alive to their responsibilities by maintaining discipline among students. They should make sure that students are well taught, and well supervised during examinations to avoid mal-practices. Also lecturers should resist the temptation of taking remunerations offered by lazy students to enable them pass. The popular “blocking of lecturers which some lazy students employ to pass examinations should be avoided.

References


Loretta Ukamaka Egwelu-Osayede


ANALYSIS OF NUCLEAR POWER GENERATION AND MANAGEMENT IN NIGERIA

C. N. Eze

Abstract

Energy is the biggest challenge of the twenty-first century. We must lift much of the world out of poverty, which will require large increases in energy production while simultaneously curbing greenhouse gas emissions. In order to accomplish this, we must adopt solutions that are based on efficiency, renewable, nuclear energy production and safety, and if it can be demonstrated, carbon sequestration and then adopt the idea which said that “an energy future without a significant contribution from nuclear energy simply isn't an option”. Since renewables are by their very nature intermittent, they cannot have a huge impact unless--and until--we develop adequate energy storage technologies and drastically improve our fragile electricity distribution network. In a developing country like Nigeria where energy demand is far more than the supply due to insufficient power generation, incessant outage of power as a result of failure of power generation plants, due to technical faults and ageing, the use of nuclear power plant provides answers to the problems of electricity generation. Since energy is important for socio-economic development considering safety, economy, reliability, sustainability and even waste management, nuclear energy as an alternative source of energy should be used. The nuclear power option once again is appealing to some opinion leaders in the world. As an alternative to fossil fuels and looming energy crisis, we can find a solution to the problem of climate change, environmental degradation, and fossil fuel dependency, while guaranteeing equitable, sustainable development. Many problems stand in the way of this so-called renaissance, not least the mammoth costs involved and the fact that no safe system has yet been devised for the long-term storage of nuclear wastes. Furthermore despite many improvements in the safety of nuclear power plants, worries persist about the risk of nuclear accidents such as those that occurred at Three Mile Island in USA in 1979 and Chernobyl in Ukraine in 1986. However, this alternative source of energy will pose a political problem in that nuclear power plant could be used for both military and economic purposes. It is observed that all attempts, so far, to produce enough electricity power for its citizens have hit the rocks in this country, Nigeria, due to various reasons including inefficiency and corruption. The purpose of this paper is to urge Nigeria (and other countries like it) not to give up its efforts to generate sufficient electric power by the usual traditional methods (coal, solar, wind, etc) but to continue to try until success has been achieved in the short term and to vigorously endeavour to go nuclear in the long term since nuclear generation of electricity is the ultimate in power supply. The paper also shows how the nuclear
program has been achieved in some other countries and how Nigeria can follow suit in the development of nuclear energy for peaceful purposes.

Introduction

The use of electric power supply has contributed immensely to the rapid development of various sectors in our society today. From technological point of view, the need for electrical power has effect on every part of the globe to the extent that almost all facets of life crave for a steady power supply for adequate improvement, for survival and for growth. The role that electricity plays in our lives by enhancing our productivity, comfort, safety, health and economy is obvious. We live with the benefits of electricity everyday so much so that we take for granted the cheap availability of power.

There are many different ways to generate electricity-including coal, oil, gas, nuclear, solar and hydroelectricity etc. Each option inherits certain advantages that merit consideration whenever there is need for a new power plant. Nuclear-generated electricity is unique in that it inherently addresses many of the shortcomings of the other means of power generation. The use of nuclear power provides answers for many problems in the areas of the environment, safety, economics, reliability, sustainability and even waste disposal. Nuclear-generated electricity is not just produced in the developed countries like United States alone. Many developing countries world-wide have nuclear power plants generating electricity for their citizens. Also, nuclear power generation continues to grow annually with concern over the environmental effects of global warming and pollution. The challenge today is to move away from our heavy dependence on fossil fuels and utilize non-carbon energy resources more fully. Concerns about global warming are a major reason for this.

The current situation surrounding the global energy crisis and its connection with anthropogenic climate change calls for a similar gamble on technological innovation and sustainability. In too many cases, alternative energy options, such as geothermal and wind, have been discarded with the argument that they have not been proven to work on a mass scale and are far from complete development. It is exciting to talk about principles and futuristic technologies, but what about accountability and responsibility? Developing nations do have growing energy needs, but it is totally irresponsible and short-sighted to sell them nuclear reactors and fuel and then leave them with tons of toxic waste and no long-term safe storage plan.

The fundamental assumption underpinning this discussion and Global Nuclear Energy Partnership (GNEP) itself is that the world is about to embark upon a global expansion of nuclear power. The consequences of such an expansion will be an increased demand for fissile atoms and an increased amount of used nuclear fuel produced. Both of these consequences could be problematic, and both also are connected to the overarching fear of increased weapons
proliferation. The world has to watch this expansion especially its political implication and the safety of mankind and his environment.

Among other things this paper deals with the origin of nuclear energy in electricity generation and in warfare; the science involved in nuclear energy generation (that is the nuclear reactor); the safety and hazards/dangers associated with nuclear reactors; the advantages and disadvantages of nuclear energy processes; the diplomatic and political intrigues related with nuclear energy; the problems of waste management and the application of the above issues to Nigeria as well as recommendations and conclusion.

The Origin of Nuclear Energy in Electricity Generation and in Warfare

Nuclear energy is that energy resulting from the fission or fusion of atomic nuclei. This energy which is greater than that from either chemical or mechanical sources results from the conversion of mass directly into energy (Mass Energy Equation). The real import of nuclear energy is best imagined if we realise that one pound of uranium during fission releases energy equivalent of 2.5 million pounds of coal during combustion.

We cannot discuss nuclear energy adequately without first mentioning the word atom. The atom is the least fundamental unit of matter; the smallest portion of matter displaying the characteristic properties of a particular chemical element. The atom consists of a heavy nucleus composed of protons and neutrons held together by extremely strong nuclear forces surrounded by a cloud of electrons. The term atom has its etymology in the Greek word “atomos” which means indivisible-the ultimate which is incapable of being reduced to any other form or unit. Even though the Greek Epicurus (341-270 BC) was a philosopher of pleasure, he touched on the word atom which the Roman Lucretius (99-55 BC), an academician of a sort, eulogised in his epic poem “De rerum natura”. However those ancient philosophers could not split the atom nor could they detonate the nuclear energy. They simply could not fully appreciate what they were talking about.

The nuclear age was born on December 2\textsuperscript{nd} 1942 in a squash court at the University of Chicago in the United States of America (USA) when the Henrico Fermi led group of scientists successfully operated the first nuclear reactor. Seven months later, precisely on 16\textsuperscript{th} July 1943, nuclear energy was released in an uncontrolled manner. Thus as a test case, the first atomic bomb was detonated in the isolated desert of Southern New Mexico in the USA. It was effective. The Second World War (1939-1945) had ended in Europe, America, Africa, in fact all over the world in May 1945, but the Japanese who were in the same group as Hitler’s axis held out as unconquered and continued fighting. Consequently, the American army dropped two nuclear/atomic bombs on Hiroshima and Nagasaki both in Japan on 6\textsuperscript{th} and 9\textsuperscript{th} August, 1945 respectively and brought Japan to a complete silence. The war ended. Thus nuclear energy was first used as a weapon in warfare.
Since the end of the Second World War, scientists have been trying to apply nuclear energy to other uses such as medicine, agriculture, weather etc other than military. As a result electricity was generated for the first time by a nuclear reactor on 20th December 1951 at the EBR-I experimental station near Arco Idaho in the USA and it produced initially about 100 kilowatts (International Energy Agency Handbook). On 27th June 1954, the then Union of Soviet Socialist Republics (USSR) nuclear power plant became the world’s first nuclear power. As at 2004 nuclear power provided about 6.5% of the world’s energy supply and 15.7% of the world’s electricity with the USA, France and Japan accounting for 57% of nuclear-generated electricity. By 2007 the International Atomic Energy Agency reported that there were 439 nuclear power reactors in operation in the world, operating in 31 countries: the USA provides 19% of its power needs from nuclear sources, France 78% while the rest of the European Union (EU) provides 30% of their needs from electricity.

**Nuclear Power as an Alternative Source of Energy Worldwide**

Many countries have for many years been using nuclear energy to produce electricity eg: The USA, France, China, Japan, Russia, India, Britain, Germany etc. These major countries even plan to increase their reliance on nuclear power thus adding to the global spread of nuclear reactors. Electricity problem is a major problem confronting every nation including the ones mentioned above. Electricity is a pre-requisite for socio-economic development of any nation. Many countries are actively developing nuclear power, especially the ones mentioned above. In the USA and throughout Europe, investment in research and in nuclear fuel cycle has continued and it is expected that electricity storages, fossil fuel price increases, global warming and heavy metal emission from fossil fuel application will eventually occur. New technology such as passively safe plants and national security will renew the demand for nuclear power, will expand globally, raising the danger of increased proliferation. Other aspiring/emerging nuclear nations are scattered worldwide and include Italy, Poland, Portugal, Yemen, Jordan, Mongolia, Iran, Indonesia, Australia, Chile, Venezuela, etc. These countries are at various stages of the development of nuclear energy for electricity and other peaceful uses.

In Africa it is not only Nigeria that is planning to harness power by nuclear means. Others include Egypt, Tunisia, Libya, Algeria, Morocco, Ghana, Senegal, Uganda, Namibia, etc. In fact the African Union (AU) has recently formed a club of about 20 African countries ready and eager to embark on the generation of electricity by nuclear means. Among them South Africa is the most developed. It has already two nuclear power plants producing between 15 and 20% of its total electricity needs.

In Nigeria the Nigerian Atomic Energy Commission (NAEC) was established by Act No. 46 of 1976, as a specialised focal agency with the mandate to develop and deploy nuclear energy for the nation’s socio-economic
development. The federal government endorsed the Commission’s road map which aimed at generating 2000 mega watts by 2007, 3000mw by 2009 and 9000 mw by 2010, but this plan did not materialise. However, in 1997, the Commission succeeded in establishing the only nuclear reactor and neutron generator in Zaria for research purposes with only licensed radioactive, waste management, various analytical and radiation management facilities for various applications.

Another nuclear energy research station is currently being developed near Abuja. The approval for the reactor was obtained in 1994 with the aid of a technical co-operation agreement with the International Atomic Energy Agency (IAEA). Thus Nigeria ranks 6th after South Africa, Egypt, Ghana, Morocco and the Democratic Republic of the Congo in the quest for the acquisition of nuclear power for peaceful purposes in Africa.

The Science Involved in Nuclear Energy Generation: The Nuclear Reactor

The vast majority of nuclear reactors operating today, (and probably those of the immediate future,) are light water reactors fuelled with enriched uranium. Therefore, more reactors will require more uranium and more enrichment capacity. Enrichment technology can be used to produce nuclear fuel (or at higher enrichment levels), weapon-grade materials.

Nuclear energy (energy derived from the nucleus of an atom) [is the energy in the nuclear core of an atom]—atoms are tiny particles that make up every object in the universe. The neutron of the atom is usually speeded (2x10^3 m/s) to strike the nucleus of the uranium atom. They penetrate through the electrons orbiting round the nucleus and eventually leading to disintegration of the nucleus. The disintegrated nucleus from other neutrons from other atoms add to the further breaking of the nucleus of the atom. The energy formed in this process is usually very large and can be harnessed for power generation. There is enormous energy in the bonds that hold atoms together. Nuclear energy must be released from atoms in two ways: Nuclear fission (which produces energy for nuclear power and to drive the explosion of nuclear weapons) and nuclear fusion [which involves the release of millions-volts (mev) by fusion of two light nuclei as when two heavy hydrogen nuclei deuteron (2H) combine in reaction] and a third one called radioactive decay. Nuclear fission is used by nuclear power plants to produce electricity.

Nuclear energy is used to generate power thus: Nuclear fission makes heat—heat from nuclear fission makes water to steam—steam turns turbine—turbine turns generator—thus electrical power is sent around the country. In other words, in electricity generation, most power plants produce electricity by first boiling water to produce steam. The steam is used to spin a turbine. The shaft of the turbine spins the generator (a large coil of wire) between two magnets. The spinning coil of wire generates electricity. The main difference between a nuclear power plant and other kinds of power plants lies in the way the water is heated to
steam. In a nuclear power plant, heat is produced by splitting atoms rather than, for example, the combustion for oil, gas or coal in a respectively oil, gas, and coal fired plant.

The major material needed in the generation of electricity with nuclear power is uranium. It is not necessary to have uranium reserve to run a very successful nuclear power programme. The introduction of $^{235}_{92}U$ atom into the reactor is accompanied with the bombardment of the nucleus of the atom using slow moving neutrons of other atoms (uranium) in the system which when bombarding the neighbouring nucleus cause a chain. The enormous heat energy released from the reaction is used for electric power generation.

The other source of fissile atoms is the used fuel from light water reactors that contain not only residual unfissioned uranium 235 but also fissile plutonium. It is possible to recover the residual uranium and plutonium from used fuel by a process generically referred to as reprocessing. Again we are confronted with a dual-use technology because reprocessing can separate plutonium from used fuel to create new fuel or to construct a nuclear explosive device. Global Nuclear Energy Partnership (GNEP) as originally conceived, advocated for the development of “proliferation resistant” reprocessing technology to deal with this problem.

The nuclear reactor is a device in which nuclear chain reaction is initiated, controlled and sustained at a steady rate. It is of different types: pressurised water reactor (PWR), boiling water reactor (BWR), breed reactor (BR), pressurised heavy water reactor (PHWR), light water graphite moderated reactor (LWGMR) and fast neutron reactor (FNR). Most of today’s nuclear plants were originally designed for 30 to 40 years operating lives. However, with major investments in systems, structures and components, their lives can be extended up to 70 years.

Power generation by nuclear energy provides high power output and steady power supply in the sense that high energy released during fission chain – reaction will drive turbine for a longer period of time. It is economical as the cost of fuel in nuclear reactor is cheap and readily available in Nigeria. The above analysis makes it necessary to evaluate the nuclear reactor technology especially in the application to power generation, transmission and distribution in Nigeria, comparing nuclear power technology with other means of power generation with its merits and demerits, hence investigating the current status in power generation and distribution in Nigeria.

Safety and Hazards/Dangers Associated with Nuclear Reactors:

Nuclear generated electricity is unique in that it inherently addresses many of the short comings of the other means for generation especially problems related to environment, safety, economics, reliability, sustainability and even waste disposal. The safety of a reactor is a prime concern for its owner for
several reasons; to ensure the safety of the public, the reactor operators and the investment itself, hence developing the reactor according to industrial standard by experts’ committees. Some nuclear regulatory bodies such as (IAEA) International Atomic Energy Agency, Nuclear Regulatory Commission (NRC) and the Nigerian Atomic Energy Commission (NAEC) ensure the best of industrial practices (ie, are often at hand to carry out appropriate tests before the beginning of operation). Some hazards of nuclear reactor are: nuclear proliferation, terrorism, vulnerability of plants to attack, use of waste by-products as a military weapon. Despite the Three Mile Island (in USA) and Japan hazards which were due to human error and disregard of safety guide lines during processing by plant workers, respectively, nuclear power plants still produce the best clean and safety energy generation.

The building and use of nuclear reactors leads to greater routine releases of radio activity into the environment, greater worker exposures to radiation, larger inventories of nuclear waste that must be managed, and it does not appreciably reduce the geologic repository requirements for spent fuel or high-level nuclear waste. Even though serious efforts are being made to secure permanent geological repositories, in the mean time opportunities to high jack radioactive wastes during transportation exists. For instance, it was during transportation that such radioactive wastes found their way into the “dirty bombs” of September 11 2001 when the USA was attacked from the air and important buildings and thousands of people were destroyed.

Advantages of Nuclear Energy over Other Sources of Energy

In these difficult economic times, nuclear power has a very important benefit--the number of jobs created per megawatt of installed capacity is far higher than for any other source of electricity generation. Though the initial capital cost of building nuclear power plants is enormous yet the maintenance/running cost and funding is small compared to others. Nuclear power produces about 18% of the total world’s energy needs and produces huge amount of energy from small amounts of fuel without the pollution obtainable from burning fossil fuels. Nuclear energy also finds its uses in medical, industrial, and commercial applications, and in agriculture and food processing, as well as in weather forecasting, etc.

Nuclear power costs about the same as coal, so it is not expensive to produce. It generates huge amount of energy from small amount of fuel. It does not produce smoke or carbon dioxide, so it does not contribute to the green house effect, it produces small amount of waste. It is reliable. There is very effective waste management system.

Overall, there are several strong arguments in favour of nuclear energy. Backers argues that it brings more technological development than alternative energy sources; that it is a “proven” method for meeting large-scale energy demands, as in France, where more than 70% of the country’s electricity comes
from reactors; that it provides a continuous supply of energy, unlike technologies such as hydroelectric and wind power that depend on environmental factors difficult to predict; that global stocks of uranium will outlive those of oil, solving the fuel supply problem in the medium term; and that the patterns of uranium dependency do not involve politically sensitive regions of the world, as happens with fossil fuels. Nuclear reactor provides long term electricity generation, and the most common nuclear fuels $^{235}_{92}U$ and $^{239}_{92}Pu$ have half life time of about 700 million and 24,000 years respectively, whereas hydroelectric power plants, for instance, can last only for hundreds of years.

**Disadvantages of Nuclear Energy**

Nuclear energy generates dangerous waste that is difficult to isolate, cannot be reprocessed by nature’s cycles, and lasts for several thousand years—therefore posing a tremendous threat to the environment and human health. Even though the conventional sources and methods used in electricity production generate residues that have to be managed, none of them poses as many risks as nuclear energy nor do they require such a long-term management programme. (Plutonium disposition must contemplate prevention of leaks from containers and waste sites in a time frame of about 100,000 years; in contrast with climate change remediation which considers a time scale of hundreds of years). Nuclear energy is not entirely secure, as demonstrated by the accidents in Chernobyl (Ukraine) and Three Mile Island (USA). Though no energy source is inherently secure, an oil spill is not the same as a radioactive spill. As proved by Mexico and Brazil in Laguna Verde and Angra II, the construction, dismantling, and decommissioning of nuclear facilities is extremely expensive. In the case of Laguna Verde, for instance, it is estimated that the initial cost of dismantling it will be from $500 million to $1 billion.

Nuclear energy is intrinsically linked to the shadow of nuclear proliferation, which humanity has sought to exorcise without success since the 1950s. Against all such efforts, the nuclear bomb is being reproduced throughout the world. In 1945, only the United States had the capacity to mount a nuclear attack. Today seven countries have joined the former club of one: The United Kingdom, France, India, Pakistan, Russia, Israel, and China have offensive nuclear capabilities—and no one is sure whether the nuclear programmes at Natanz in Iran and North Korea are heading in that direction or not. There is the problem of sending investment money abroad, of buying technology from abroad and of hiring or training technicians capable of maintaining the operations for example; Mexico depended on the multinational company, General Electric and Brazil on Westinghouse. Accompanying the initial costs of the projects are the other expenses and risks in the rest of the nuclear fuel cycle, particularly in the management and utilization of the uranium that feeds the reactors. The nuclear fuel cycle is a series of complex and costly procedures that include the phases of
extraction, purification, enrichment, exploitation, and reprocessing of the nuclear fuel.

Furthermore, the greatest cost and the most pressing challenge is that of nuclear proliferation. It is undeniable that undertaking a nuclear program conjures the ghost of the atom bomb. The technology used for a crude nuclear detonator is, in the opinion of many experts, little, if any, different. The complicated bit of the operation is obtaining highly enriched uranium or plutonium. So far no international agreement has been reached on mechanisms to control and eventually eliminate nuclear arsenals because every major nation wants to belong to the nuclear club. Nations choosing the nuclear energy path today would create tension with the existing nuclear sphere of influence. They would have to try and guarantee the security of their facilities, entering a risky, costly, and intensive diplomatic game best avoided. The danger resides in the fact that the nuclear hole is especially big and difficult to close, due to its environmental, economic, and geopolitical implications. It is also a solution that was already applied in Latin America, and failed. The nuclear energy project has failed in many other countries due to its disadvantages.

**Electricity Problems Leading to the Alternative Source of Energy**

As was the case in France, as oil and natural gas become scarcer, government and industry leaders push for a greater reliance on nuclear power to provide additional energy. This is a programme likely to gain greater momentum from rising concerns over global warming -- largely a result of carbon-dioxide emissions created during the combustion of oil, gas, and coal. Global population growth in combination with further industrial development will lead to a doubling of worldwide electricity consumption by 2030, according to the World Nuclear Association. Add an increasing shortage of fresh water and the increasing need for energy-intensive desalination plants, and nuclear energy offers significant opportunities to meet growing energy demands of a developing world. Because of this and other reasons, an expanding set of non-nuclear countries like Nigeria are considering deploying new nuclear power plants.

Nuclear energy also enjoys a unique position in the climate debate. It's the only carbon-free energy source that's already contributing to energy supplies on a relatively large scale and is also expandable without requiring major technological breakthroughs. In addition, it offers a hedge against the vulnerability of interrupted deliveries of fossil fuels. This is a key issue in regions such as Eastern Europe, which is subject to the whims and caprices of Russia and other supplier states.

A recent Massachusetts Institutes of Technology (MIT) USA study on the future of nuclear power indicated that to be a substantial mitigation measure against future climate disruptions, nuclear energy would need to expand 1,000-1,500 gigawatts by the middle of the twenty-first century--a tripling or quadrupling of current nuclear capacity. At the same time, government incentives
to reduce carbon emissions and institute carbon-trading schemes will increase the economic competitiveness of nuclear power versus other electricity sources. It should be noted that a robust nuclear fuel supply and disposition economy will need to be provided to these emerging nuclear energy countries. Such a regime must also reduce the incentive for countries to develop new nuclear enrichment and/or reprocessing capabilities and potential sources of proliferation of nuclear materials for weapons.

In summary, it is obvious that global energy demand may double by 2030 and that the expansion of nuclear energy, especially in less-developed countries, is "inevitable" due to increased future costs for oil and natural gas and the fact that nuclear power produces no carbon emissions.

Possible Diplomatic and Political Problems

After World War II, the fear that reactor research will encourage the rapid spread of nuclear weapon and technology combined with what many scientists thought would be a long road to development, created a situation in which reactor research was kept under strict government control and classification. In addition, most reactor researches centered on purely military purposes. The memories of Hiroshima and Nagasaki in August 1945 cannot be easily forgotten. For the above reasons many regulatory bodies such as the IAEA were created to control the proliferations of nuclear reactors and other nuclear materials.

The first two super powers, the United States and Russia being also the first nuclear energy super power nations used that equality in military power to create a diplomatic and political balance that ended their cold war stance of the 1950s and 1960s. For instance the Cuban Missile Crisis of 1962 came to a peaceful end when president Kennedy of the USA threatened missile attack on Cuba and president Khrushchev of the USSR who planted the missiles in Cuba was not prepared to hazard a nuclear war (though Russia was also a nuclear power then). The possession of nuclear capabilities enhances the prestige of a nation and some nations use the opportunity to harass their neighbours as the case between Israel and its Arab neighbours eg Egypt, Jordan, Saudi Arabia etc. Before the dissolution of the USSR in the early 1990s, Russia, the head of the union used to oppress its less opportune unionists as in the military inversion of Hungary in 1956 and Czechoslovakia in 1968.

Soon after his election in 1999, Mr. Vladimir Putin of Russia set out to convert his super abundance of nuclear energy into a sort of political clout that would restore Russia’s former super power status. His government controlled the flow of energy from Russia to other parts of Europe and other former soviet republics like Kazakhstan and Turkmenistan (whose energy is exported through Russian pipelines) in other to boost Russia’s political influence.

The US under President George W Bush invaded Iraq (the second time) a few years back under the pretext that Iraq was stocking deadly weapons of mass
destruction (nuclear arsenal) but this proved wrong when the war ended and nothing deadly was discovered. The USA army is currently occupying the Iraqi soil and tapping their crude oil mercilessly. His father, George Bush the first, as President of USA attacked the same Iraq in 1992 pretending to liberate the oil reach kingdom of Kuwait which Iraq had earlier attacked, conquered and occupied under President Saddam Hussein. On each of the two occasions the president of the USA appealed to other nuclear power nations etc for assistance and they obliged him.

At the moment there is restlessness on the part of USA-led IAEA over whether Iran and North Korea are using their nuclear power plants to develop nuclear war heads instead of for peaceful purposes. Big and reach nations use their diplomatic and political positions to supply nuclear apparatuses, nuclear knowhow, and nuclear personnel in other to extract or compel the signing of agreements by other developing countries over other issues otherwise they (the big ones) would secretly threaten the use of force or (nuclear) war. In other words the possession of nuclear power enhances the achievement of political objectives like wars, over through of governments and the compelling of weaker nuclear energy- have-nots neighbours or nations to sign international agreements.

Waste Management

Every means of producing electricity involves some wastes and environmental hazards. The nuclear industry is unique in that it is the only energy producer that takes full responsibility for the disposal of all its wastes and also the fuel costs of doing so. Nuclear energy today saves the emission of about 3.4 billion tonnes of carbon-dioxide yearly as compared with over 9 billion tonnes per year actually emitted from fossil fuel electricity generation. Also, the 2000mwe coal fire power station produces about 9million tonnes of carbon dioxide each year plus perhaps 300,000 tonnes of sulphur dioxide which in many cases remains a major source of atmospheric pollution.

There is also, from burning coal, waste products like fly ash which is typically 300,000 tonnes per year and contains toxic metals, including arsenic, cadmium and mercury organic carcinogen and mutagens (substances that can cause cancer and genetic changes) as well as naturally occurring radioactive substances. If not fully taken care of, these routine wastes can cause environmental and health damage even at great distances from the site of the power station e.g. acid rain caused by the release of sulphur dioxide may cross national boundaries and cause severe damage to lakes, rivers and forests. for instance, the Lake Nyos’ (Cameroun) dispersal of poisonous gas about 15years ago.

All parts of the nuclear fuel cycle produce some radioactive waste and the cost of managing and disposing of this is part of the electricity bill which is internalised and paid for by the electricity consumers. At each stage of the fuel cycle there are proven technologies to dispose of the radioactive wastes safely.
For low and intermediate level wastes, some countries await the accumulation of it to warrant building geological repositories. The main objective of managing and disposing of radioactive or other waste is to protect inhabitants and the environment from harm. Not only radioactive wastes, but all toxic wastes need safe handling. Some radioactive wastes include Exempt waste and very low level waste, (VLLW); low level waste, (LLW); intermediate level wastes, (ILW) and high level wastes, (HLW).

Every nation handling the generation of electricity by nuclear energy is also contemplating the question of safe waste management. Even the United States is still working out details for this problem. Pending the solution of the problem which does not appear to be very near, dry storage in casks at the sites of nuclear reactor plants are used. Curies of cesium and strontium which are currently embedded within spent fuel rods would be separated through reprocessing and “could be stored at the recycling center for about 300 years or transported to a future high level storage facility”. The storage site is usually guided by legislation or by a regulatory agency like the Nuclear Regulatory Commission (NRC) in the USA.

About 131 million curies of cesium and strontium are currently stored at the Hanford site in Washington in USA and this has been described by the National Academy of Sciences as “the nation’s most lethal single source of radiation other than inside the operating reactor” itself. The Nuclear Waste Policy Act of 1982, as amended, specified that the first US repository be located in Yucca Mountain in Nevada, but even this has not been concluded.

Every nation plans its own energy waste disposal. In New Mexico, the Waste Isolation Pilot Plant, an underground repository for the country’s defense-related radioactive waste, has received and disposed low and intermediate level materials since 1999. A similar facility is in operation in Sweden. Currently it is not possible to transport nuclear wastes to other countries for disposal. The day is expected when some big nations can build internationally adequate deep repositories and dispose their nuclear waste there, as well as allow smaller countries with small nuclear programmes to transport their nuclear waste there either on diplomatic or on commercial basis.

Whatever has been said in this paper of the USA with regard to waste management applies mutatis mutandis to other nuclear power nations worldwide.

The Nigerian Position

Earlier in this discourse we saw that a group of about 20 African nations are eager to obtain electricity from nuclear power. The uses of nuclear power which Africans are clamouring for include medical, industrial, commercial, agricultural, food processing etc. In the African context of the pursuit of nuclear energy for peaceful purposes, Nigeria ranks 6th after South Africa, Egypt, Ghana, Morocco and the Democratic Republic of the Congo.
The Nigeria Atomic Energy Commission (NAEC) had planned that by the year 2010 some 9000mw of electricity would be harvested from nuclear power sources, but in vain. Nigeria is grappling with primary sources of energy in the form of natural resources like coal, wood, natural oil, natural gas, hydropower, saw dust, solar energy, and some crops. The sun pours abundant heat unto the earth especially in the equatorial region where Nigeria belongs. This energy is experienced in the form of solar radiation through wind and waves to trees and vegetation which converts the sun’s rays into plant biomass. In addition there is enormous amount of energy of the materials in the earth’s crust, the fossil fuel also storing energy from the sun.

Nigeria currently uses a limited number of the above primary sources like thermal, gas, hydropower to generates its electricity, and due to that limited input as well as the Nigerian factor (corruption), by 31st December 2009 Nigeria was unable to produce 3000 mw of electricity for its overall use. The Energy Commission of Nigeria (ECN) put the average per capita energy generation in the country at less than 35 watts per person (assuming a population of 140 million as recorded during the 2006 census).

Uranium, a rare mineral, is a sine-qua-non for the production of electricity by nuclear power. Incidentally, Africa is a major source of uranium in the world because it is found in commercial quantity in South Africa, Namibia, Democratic Republic of Congo, Angola, Nigeria etc. Despite this natural endowment of secondary energy source, no nation in Africa (except South Africa with two nuclear power plants) has attained the level of nuclear power production of electricity for peaceful purposes.

From the very distant past, power was generated in Nigeria by the electricity co-operation of Nigeria (ECN). It was not able to solve Nigeria’s power problem. The name changed to Nigeria Electric Power Authority (NEPA) without a solution to the problem. Recently the name changed again to the Power Holding Company of Nigeria—a sort of consortium into which autonomous units like generation, transmission, distribution etc were created with a central holding company. Billions of naira was pumped into the industry without visible positive effects.

Another step being taken by Nigeria currently is the establishment of the independent power plants by some state governments and individuals capable of doing so. The Rivers state government has taken the lead by its establishment of electric power generation plants in two or three locations including Omoku town (which now enjoys uninterrupted power supply for 24 hours). A world renowned robotist and scientist, Professor Bartholomew Nnaji, of Enugu State is currently developing an independent power plant called Geometric Power Limited at Osisioma Town near Aba in Abia State. A few other states like Lagos, Kaduna, Akwa Ibom, Sokoto, cross River, Bayelsa, Enugu, etc are planning to achieve the same purpose.
Nigeria’s current electricity supply as we saw earlier is very poor. Because of this situation power outage is in vogue. Multinational Industries are fast closing down and moving to other countries such as Dunlop that has since gone to Ghana to produce. Unemployment rate is rising every day giving rise to youths indulging in unethical behaviours like armed robbery, kidnapping, political tuggery, the blowing of oil pipelines, rape etc. Private companies supplying electric generators are having a field day and emission of poisonous gas such as carbon monoxide (CO) and other obnoxious gas like carbon dioxide (CO$_2$) into the environment continues with its devastating effect on human beings and on the ozone layer and occasional fatalities.

The future of civilisation and development depend upon the indefinite supply of electricity. Economic stability and to a certain extent political stability depend on constant electric power supply. As a member of the energy-haves (i.e., nations with sufficient domestic reserves of oil, gas, coal, hydro-power etc. like Saudi Arabia, Kuwait, Angola, Libya etc.), Nigeria should have by now been self sufficient in power supply but for the monumental corruption and lack of political will of its leaders.

However, to counteract the above shortcomings the President of Nigeria Dr Goodluck Jonathan has taken it upon himself to supervise the Power sector instead of giving the ministry to a minister. He has also announced that he is declaring “a semi-emergency” in that sector. He hopes to improve Nigeria’s power generation to a great extent before the general election of 2011. Without Nigeria being self sufficient in local power generation, the president also appears interested in generation of electric power by nuclear reactors. To buttress this, he himself, attended a world nuclear energy summit in the United States early in April 2010 at the invitation of President Obama of USA, with whom he (Jonathan) had a one-on-one discussion during the visit.

Nigeria must not wait until she becomes self sufficient in domestic power generation with fossil fuels before thinking nuclear, if it is to keep pace with the rest of the world and to maintain stance on the millennium development of 2015 and if her “Vision 20 2020” is to be realised. The source of electric power supply from fossil oil will soon give way to nuclear power generation the world over because that is the surest way of generating lasting electricity.

Despite the enormous expenses involved in the establishment of nuclear reactors (about 1 billion dollars per plant) the cost of maintenance is relatively very cheap and lasts several thousand times over other sources of electric generation like coal. The disposal of deadly radioactive waste from nuclear power plants has not been resolved even by big nations like the United States, but that should not deter Nigeria from embracing the generation of electricity by nuclear power. With our petro-dollar, we can afford the cost. Nigeria’s only leakage is that the same group that manipulated our resources for the generation of electricity from fossil fuel by misusing the huge allocations meant for this projects may also be the operators of the nuclear power project and will dip their
fingers into the resources meant for the project. The odds notwithstanding, Nigeria should go nuclear for the generation of electricity and for other peaceful purposes.

**Conclusion**

Electricity plays vital roles in our lives since it enhances productivity, comfort, safety and the economy of a nation. Overall, nuclear energy has proven to be most beneficial to our society. As a result of this technology, it holds the promise of long time energy generation with which all other sources of energy cannot compete. Nuclear energy has also proven to be a protector of the environment because of the lack of CO$_2$, green house gasses, and others it emits into the atmosphere. It is clear that nuclear-generated electricity is highly efficient, cheap, long lasting and can provide the required output for the social and economic growth of any country. It is unique in that it inherently addresses many of the short-comings of the other means of power generation. There are however, some major drawbacks to using nuclear energy; the waste it produces, and the atomic weapons that nuclear energy promotes. Generally, however we believe that the use of nuclear energy greatly outweighs any other source of energy.

Nuclear power will continue to play a modest role in mitigating climate change over the next 20-30 years--the most relevant time frame for addressing the climate issue. Its increased use will be predicated upon evolutionary improvements to the nuclear technology we have today, and not on some laboratory's vision of an ideal closed fuel cycle. Facing a range of renewable power options--from biogas and small hydroelectric to wind, solar, and geothermal--that are cost competitive with electricity from new nuclear plants in various parts of the nuclear power countries, a significant expansion of conventional nuclear power after 2030 is by no means assured.

Nuclear energy is very exciting: It's going to solve the anticipated energy crisis of the world and especially help developing nations (like Nigeria) meet their doubling energy demands, provided that nuclear energy countries will conduct the sale of nuclear reactors and fuel using proliferation-resistant technologies and following non-proliferation codes of conduct.

**Recommendations**

Despite the enormous costs involved in the building nuclear power plants, such plants must be encouraged because of their most stable reliance as a source of energy in comparison with other sources of energy supply. International and domestic regulations must be put in place to guard and control the establishment of nuclear power plants. There should be continued research with regard to nuclear power waste management as nuclear energy is a good master if adequate controls against spill are maintained but a bad servant if radioactive waste spills uncontrolled.
Africa and Nigeria in particular must endeavour to step into the path for the establishment and possession of nuclear power plants for peaceful purposes (medicine, agriculture, commerce etc) and must eventually delve into the possession of nuclear power for military purposes, with the passage of time because the possession of nuclear energy for military purposes is the in-thing and the commanding height for the recognition of nations as powerful. In this case, South Africa, Egypt and Nigeria are recommended as countries capable of joining the nuclear club as soon as possible.

However all efforts by all nations must guard against nuclear energy getting into the hands of evil organisations in the world like Osama Bin Ladin’s Alcaida for if such organisations split the atom they will insist on ruling the world alone and enslaving the rest of mankind otherwise they sink it.

References

A Nuclear Engineering International Handbook.


Michael Klare T. (2007); Energy control and political power

Muhammad Sahimi, (2007); A diplomatic solution to Iran’s nuclear program. www.antiwar.com


Stephen Goldberg M. (2008); The world needs a strong global nuclear economy:


*The New Lexicon Webster’s Dictionary of the English Language.*

Venezuelan President Hugo Chávez comments


TOWARDS A FUNCTIONAL PRIMARY EDUCATION AND NATIONAL DEVELOPMENT IN NIGERIA

Esther Amina Akuh

Abstract
Primary education constitutes a very significant sector of Nigeria’s educational tripod. The increasing roles of primary education in national development are unmistakably clear since it is the frame from which other educational stages found footing. However, this paper has examined functional primary education and national development. It also discussed the meaning of primary education and national development. Finally, the paper examined the challenges of primary education in Nigeria and the way forward.

Introduction
The developmental agenda of most countries emphasize effective and functional primary education programme as a ladder through which science and technology could be attained. Nigeria is no exception. Laudable programmes have been identified and systematically pursued through different levels of formal education programme as the most effective ways for attaining science and technological development (FMST, 1998). The primary level is the key to the success or failure of the whole system.

The word “primary” in education is not used everywhere in the same way. Some countries call it “elementary”, which implies, probably, what is essential and simple. Other use the words “basic”, “fundamental” although these terms have of recent acquired special definitions. In a strict sense of the word, “primary” connotes first, the first stage of education (Pokalas and Nuhu, 2006). But like Nwagwu (1981) observes, “primary education is its usual accepted sense is not the first stage in the education of children. All children start receiving their first education in the home from the moment they are born”.

Based on this fact, “primary” education is not really primary, and it is not always easy to see where it begins and ends, or even where it should begin and end. It is not an unchangeable God-given stage which has exactly the same meaning for everybody everywhere. However, the truth remains that primary school is a truly universal institution no matter its appellations (Pokalas and Nuhu, 2006). These institutions are in all part of the world catering for children of approximately the same age groups.

The National Policy on Education (2004) settled these controversies and defines primary education as “the education given in institutions for children aged 6 to 11 plus”. It further states the goals of primary education as follows:

i. Inculcate permanent literacy and numeracy, and ability to communicate effectively;
ii. Lay a sound basis for scientific and reflective thinking;
iii. Give citizenship education as a basis for effective participation in and contribution to the life of the society;
iv. Mould the character and develop sound attitude and morals in the child;
v. Develop in the child the ability to adopt to the child’s changing environment;
vi. Give the child opportunities for developing manipulative skills that will enable the child function effectively in the society with the limits of the child's capacity.

From the above background, it can be deduced that primary education goals have direct link with national development because a country, which aspires for national development must be literate, scientifically able and knowledgeable in all ramifications.

National Development

Development is not guaranteed by nature rather, man is responsible for it. Development according to Adewole (2000) means nothing but change through the transformation of ideas, technologies, and those cultural factors, structures and relationship that may resist development. So, change and transformation are prerequisites for development. Development takes place where there are visible changes in the society as a whole. Also, it takes place only where there are positive interactions and coordination among all the sectors.

National development, on the other hand, is the creation of a form of society in which the following conditions prevail for members:

- Safety, in that the society is generally non-violent and that individuals are protected from victimisation by the state or the police or each other;
- Sufficiency in that they have enough food, clothing and other material things so that they are not prevented from making the full use of their potential;
- Satisfaction, in that their lives are generally pleasant and that sufficiency is not achieved at the cost of psychological and cultural disruption and disturbance;
- Stimulus, in that the people are kept aware of their intellectual, emotional, social or spiritual potentiality and encourage to fulfil it (Pokalas and Nuhu, 2006).

Furthermore, national development can be assessed through:

i. Increase in the real income of the average citizen;
ii. An even distribution of income among individuals and socio-economic groups;
iii. High level of productivity and low level of employment and unemployment;
Towards a Functional Primary Education and National Development in Nigeria

iv. Basic shelter – housing for normal living, recreation, offices, institutions and others;
v. Effective management and use of agriculture, forestry and fisheries for providing food to the people in quality and quantity;
vi. Attitudes and behaviours – patriotism, beliefs, attitude to work and public property, honesty, dedication and commitment to positive edifying values;

Functional Primary Education for Nigeria

According to Adewole, (2000) functional primary education means an active and vibrant primary education rather than passive one. Functional suggests a system where attention is paid to activity or rather practical application of the subject of focus. Functional primary education is opposed to theoretical in the sense that it abhors speculation and deals rather with facts as presented by experience.

Functional primary education is not education concerned merely with knowledge but rather the practical application of knowledge based on the experience of the learner (Alaezi, 2000). It is being opposed to the education based on theoretical knowledge; that functional primary education is that education which in view of its practicality equips its products with skills.

The acquisition of skills by children at the primary education level, makes them functional and gainfully employed. So, the need to equip children with some basic occupational competence early enough becomes more obvious when we consider the transition rate from primary to secondary level in Nigeria. True, the skills that involve manipulation ability are more easily grasped when the learner is still young. It should be noted according to Pokalas and Nuhu, (2006) that when we make a case for a functional primary education it is not to say that at the end of the experience the child must have reached the point of independently starting up a trade or artisanship. Therefore, because functionalism here is that which calls for practical application of school knowledge, attitude and skills. Functionalism in primary education calls for the integration of useful community skills into school work.

There are five main learning situations, which correspond to the main objectives of functionalism of the primary education curricular structure. These according to Alaezi, (2000) include:

a. Making primary school pupils learn through doing.
b. Making community experts come to work alongside the pupils.
c. Seminars, academic and practical group work with a teacher.
d. Encouraging pupils to work together in small groups.
e. Teaching pupils to work individually by themselves.
More so, functional primary education involves children’s sound knowledge of their community, making the children to learn to value positively the norms and institutions, which are considered central to the community and helping the children to learn to identify and exploit opportunities offered by the community and its environment.

**Primary Education and National Development**

No nation of the world had attained a level of national development without first being pivoted on primary education. Most period of a nation’s march to development are usually correlated with the primary sector. Functional primary education provides food for the individual and the community, in the long run contributes to GDP, provides basic level employment opportunities and raw material for the second stage of our educational tripod (Adewole, 2000).

The concept of functional primary education is skill, knowledge and personality factor combined to foster national development, which is seen as a positive change from developing and underdeveloped nation. Primary education affects national development by facilitating and setting the space for all forms of development. Primary education, perhaps more than the other levels of the education system. The Nigerian school system must prepare young people for the realities and needs of their country and society so as to contribute to national wealth for national development. This effort demands a radical change in our primary education system.

**The Challenges of Primary Education in Nigeria**

Inspite of the contribution roles of primary education to national development, its development in Nigeria remains somehow sluggish, defective and neglected. Among the prominent defects are the quantity and quality of the teaching force, the education and training system, infrastructural materials, etc. Once primary education is neglected the road-map to national development begins to open ranks, the greatest obstacle towards the realisation of national development in Nigeria is the lack of giving primary education its rightful place as the foundation on which all other sectoral developments revolve.

Inadequate preparation of primary school teachers create insurmountable problems for pupil’s learning (Oyetunde and Umoru, 2000). The general academic standards of students in Colleges of Education and other institutions of education is very low. Teachers with poor foundations inevitably produce pupils with poor foundations no matter the efforts of governments and others as well as supervisory agencies.

One particular interest is the assumption that a primary school learners will have been armed with requisite literary skills for further development in education. This is practically not so. At this age of primary education the child is not equipped or armed with the requisite literacy skills. True, no one will dispute the fact that the inculcation of literary skills in children should be the foremost
emphasize of primary education. Unfortunately, evidence abound that primary education, as it is offered in government schools, is falling in this task of equipping children with the needed literary skills.

Conclusion

It is clear that functional primary education is a unique instrument for excellence for the development of the individual and the nation. So, growth in all facets of national life depends upon a primary and literate populace. This is so because the primary is where basic foundation to knowledge, skill acquisition and national development is laid.

The quality of the children’s education depends on the quality of the primary school’s teachers. In the same vein, the future of any nation depends on the quality of primary education and their children. The primary school’s teachers are the builders of the future and the nation.

The Way Forward

The Nigerian school system should prepare young people for the realities and needs of their country and society so as to contribute to national wealth for national development. This can only be achieved if primary education is rightfully placed as the foundation on which all other educational developments revolve.

Primary education for national development must take into cognisance the various potentials primary education stands to offer. The present low morale of teachers resulting from poor condition of service especially at the primary school level and irregular payments of salaries in some states as well as the uncertain nature of their promotions are some of the reasons for a high rate of attrition among teachers in Nigeria. improved condition will go a long way to motivating them to stay on the job and attracting recruits into the noble profession.

Qualified teachers should be employed to teach at all the primary schools level. There should be adequate provision of funds by the government. Primary school teachers should also be well trained through seminars, workshop, conferences, etc. to be able to equip children with needed literary skills. Teaching materials should be provided to them adequately.

References


Esther Amina Akuh


MICROFINANCE AND POVERTY REDUCTION IN NIGERIA

O. A Unuigbokhai and M. S. Jimah

Abstract

Microfinance is a key policy strategy for poverty alleviation. Inadequate access to credit by the poor has been identified as one of the contributing factors to poverty. To redress the issue the policy of increasing access to both production and consumption credit by the poor has been articulated. For sustainable poverty alleviation the policy also emphasizes the sustain inability of the microfinance institutions (MFIS) that deliver services to the poor. It is for this reason that the government credit programme are to be wound up and all recovered funds form such schemes will be channeled to sustainable MFIs. This paper established the factors that poverty is indeed increasing in Nigeria based on the poverty assessment study commissioned and sponsored by the World Bank in 2001. It further indicated in the introduction that the World Bank and the International Monetary Fund (IMF) group are focusing on poverty assessment study commissioned and sponsored by the World Bank in 2001. It further indicated in the introduction that the World Bank and the International Monetary Fund (IMF) group are focusing on poverty reduction as a prerequisite for debt relief. In the conclusion, the paper emphasized that indeed microfinance is strategy of poverty reduction.

Introduction

Poverty alleviation has been a key development challenge over decades. One of the identified key constraints facing the poor is lack of access to formal sector credit to enable them to appreciate economic opportunities to increase their level of output hence, move out of poverty. This concern for the poor has been responsible for the design of various financial sector policies with conflicting prescriptions. In the case of Nigeria, the issue of the importance of improving access to the poor was identified as a key development strategy right from the 1960’s. The formal banks that were inherited from the colonial government were inherited from the colonial government were judged to be serving the trade sector and neglecting the agricultural sector that was the backbone of the country’s economy employing over 75% of the population especially in the rural sector.

This motivated the government to set up state-owned banks (like agricultural Development Bank) whose mandate include to provide credit to the rural sectors including agricultural credit. This was under the policy of sectoral allocation of credit and controlled interest rate which were administratively fixed by the Central Bank (Muwanga, 2000). The credit to the poor engaged in
agriculture was extended mainly in kind through the supply of productive inputs like fertilizers, high yielding seeds and tractor hire services under special bank schemes like Rural farmers scheme. The recovery performance of these credit schemes was poor partly because of the perceptions that these were government grants and also because of the lack of the linkage between production and marketing. There were however, concerns that this directed credit was not reading the poorest of the poor as it was the non-poor with good political commendations who mainly accessed this credit. This led to increase in high level of poverty which is an indicator that point to the need to improve the output of governance which is expected to impact on poverty.

At the global level, the World Bank Devoted the “World Development Report 2001/2002: Attacking Poverty” to the subject based on new evidences and a deeper understanding of the meaning and causes of poverty.

The report are argued that major reductions in world poverty are indeed possible. It shows that economic development continue to be central to success in reducing poverty but that poverty is also an outcome of economic social and political processes that interact with and reinforce each other in ways that can ease or exacerbate the state of deprivation in which poor people live.

Consequently the report concluded that to conquer poverty requires actions at the local, National and global level to expand poor people’s opportunities empower them and increase their security.

**Conceptual Framework**

Understanding how to alleviate poverty is a central concern of development economics. Martins (2002) indicated that there are ample evidences that policies designed to foster economic growth significantly reduce poverty, but hat polities aimed specially at alleviating poverty are also important. For example, programs that provide credit and build human capital try to eliminate the causes of poverty. Such program can have a short-run or long run perspective.

Timothy (n.d) took a short run perspective on program design for alleviating poverty, assuming that income-earning abilities are fixed. He took two disparate approaches to program design which he called the technocratic and the institutional. The technocratic approach was usually associated with economist, focusing on targeting, exploring the theoretical and empirical implications of trying to direct limited resources to people with the greatest need.

These efforts emphasize the difficulties of identifying target groups and using creative approaches to program design that substitute for detailed information required to achieve first-best results. Central to such explorations are the incentive effects of program design which underscore the need to know key behavioral parameters such as labour supply responses in order to formulate policy.
The institutional approach is more common among non-economists. For them, the question of why programs for the poor do or do not work has much more to do with social institutions that with policy design. In this view, anti-poverty policies fail because the poor lack political power or because administrative incompetence or corruption keep governments from delivering services. Thus, improving the lives of the poor requires developing institutions, improving government performance, and changing political structures and attitudes towards the poor.

The gulf between these two perspectives is evident in their views of the role of Non-Governmental Organizations (NGOs), in poverty alleviation programs. The technocratic approach rarely refers to NGOs, while the institutional approach considers them vital to the attack on poverty in developing nations. The increasing concern with better targeting in poverty alleviation programs stems from governments' desire to minimize the cost of achieving poverty alleviation objectives. The model is a useful vehicle for clarifying thinking about a number of issues relating to poverty alleviation objectives. The model views society as composed of two groups: those who make transfer (the rich) and those who receive them (the poor). The model's assumptions are as follows:

i. That the rich care about consumption of the poor and not their utility.
ii. The rich control government and its goals is to design a poverty alleviation program i.e. financed through taxes paid by the rich.
iii. There must be voluntary participation by the poor in poverty alleviation programs i.e. the poor must be willing to take any benefits intended for them.

Review of Country Experience of Finance Program for the Poor

In order that we appreciate the successes and/or failures of those programs we are going to review it is pertinent to bring to focus the breakthrough that have made microfinance programs important in alleviating poverty.

The delivery of financial services to poor and low-income people changed significantly during the past decade. First, the assumption about the ability of the poor have been overturned based on well-documented experience in banking with the poor in a selection of developing countries. A small number of highly effective microfinance programs have demonstrated that low-income clients can use small loans productively, repay them back fully and on time when given reason to do so, can and are willing to pay high real interest rates for their loans, and so save and often need savings services as much as or more than credit services. These findings correct earlier notions that the poor cannot use credit effectively do not have the capacity to repay loans, cannot afford to pay high interest rates that reflect the real cost of funds and do not generate sufficient surplus funds to enable them to save.
Secondly, a shift in thinking is within the effort being made for delivering credits and savings to the poor. This is being conceptualized as extending the reach of national financial systems to include low-income customers. For example, financial sectors are being redefined to include non-bank financial institutions as well as banks. This framework differs radically from the long-standing practice of separating micro finance programs from financial sector development and including it within “project” context for social welfare services for the poor. In this view, micro-finance institutions fit within a continuum of financial and in fact represent an essential component of an integrated financial system that serves the majority of citizens. This new paradigm necessarily has far-reading implication.

- Links between all financial institutions on the continuum become far more important.
- The need to revise banking regulations to include non-bank financial institutions arises.
- A new legitimacy is granted to financial institution that serve the poor and to their clients who come to represent an enormous new market for financial services rather than a hefty welfare burden.

A third breakthrough has been the development of new lending large numbers of low income borrowers and in moving micro finance institutions toward financial sustainability. These technologies are designed to deliver small loans with terms and conditions that meet the needs of poor clients to lower lenders’ transaction costs and to increase revenues by using full-cost interest rates and high loan repayment rates.

A fourth important change is that micro-finance institutions are now expected to attain high levels of (if not full) financial sustainability within a reasonable period of time. The generation of credit programs were fueled by a constant supply of donor funds and paid little attention to operating costs, loan losses and the expense of auxiliary services efficiency and cost recovery were not priorities for services providers or for international donors. As a results credit programs had minimal outreach because credit funds were limited to donor funds, department rates were poor, financial intermediation was stunted because cheap credit discouraged the mobilization of local deposits and credit was concentrated in the hands of privilege and less than-credit worthy borrower who successfully pursed these subsidized loans over the past decade a handful of pioneer micro-finance institutions have demonstrated not only the bank ability of the poor but also the potential for sustainability of financial institution that serves the poor. Full financial sustainability is reached when administrative, loan loss inflation and financial costs are covered entirely by revenues.

The fifty development of significance is the new focus on mobilizing savings among the poor. Micro finance institutions increasingly are under pressure to mobilize savings and there is some contention among practitioners about the wisdom of this trend. It is clear that savings service are needed
urgently by large number of poor people around the world to prefect their in comes and to serve as an alternative of the assumption of debt. savings deposits also offer micro finance institutions a valuable source of sustainable local funds.

Experience of some Finance Models

There are basically formal and informal models of purveying micro credit to the target group.

a. The informal Model: The informal models s built around concept. The model works in a situation where groups whose commitment to savings and credit are weak and look up to donor sponsored credit are weak and look up to donor sponsored credit. While this works better with a group that voluntarily come together to form a revolving savings and credit association, it develops managerial problem where the groups are not cohesive and not problem where the groups are not cohesive and voluntary (Besley, 1993).

The Grammen Bank (ii) Obtain credit (iii) Non Government organization (NGO) (iv) ESUSU.

b. The formal model: The formal micro finance model is built around formal financial institutions such as the commercial banks, rural village/community bank etc. Most of the formal institutions that purvey credit to the poor had not been successful. The reasons adduced for their failure had limited knowledge of the poor and no closer relationship between the formal institutions and the informal institution. The Grammer experience is an example of that model that have been able to transform from informal to formal model of the poor has been found to be very small compared to what the formal model can possibly attend to and also the reoccurring problem of no collateral. The formal micro credit operators have found that per-client costs are high and expensive to reach group of client physically and in part because poorly developed infrastructure increase the expense f delivering even basis need. In addition, most programme offering micro-finance services have a small capital and do not have access to the level of financing that would be requiring for significant scaling up. This is the reason why commercial banks and development banks could not really purvey micro-credit and could not be used as the second-best to informal lending. The case of Nigerian Agricultural and Cooperative Bank Nigeria industrial Development Bank, people were quite recent and confirmed the enormous problems of using the formal models as a strategy to alleviate poverty.
Efforts of Micro-Credit Delivery to the Poor
Nigerian Government Efforts and Problems

By the understanding of the level of poverty in Nigeria, Government attempted with several micro-credit programs to alleviate poverty programs/projects such as Agricultural Development programs (ADPs), National Directorate of employments (NDE), Better life for rural Dwellers (later named family support programs), the directorate of food, Roads and Rural Infrastructure (DERRI) were pursued during 1986 to 1999. Other institution that have also attempted purveying micro-credit were the rural banking scheme (1977 – 1990), people’s Bank (1987 – 1990); Community bank (1990 to 2007 date). In addition, the central Bank of Nigeria Agricultural credit Guarantee scheme which came into existence since (1977). Although all the programs were directed at improving the productive base for sustainable growth, most of the efforts at purveying micro credit to alleviate poverty were largely irrelevant, urban structured from the stand point of the realities of who is the poor understanding the poor. The programs in terms of resource endowment were dominated by government who gave paternalistic subventions in trickles. The way the programs had functioned over the years was such that credit system was essentially directed at meeting the needs of elites whereas the program is largely for small peasant poor group. The semi-bank agencies in the system. Some of which were created precisely to redress the weakness of the existing system saddled with myriads of problems especially in adequate finding as well as lack of appropriate skills to mobilize identifying the poor and cannot therefore provide the essential remedy in a sustainable way.

The most serious problem in the agencies set to provided credit (NACB) was the fact that they lacked adequate professional staff. CBN (1986) credit study shared that some 64% of personnel of NACB were administrative staff. Lending procedure were tortuous with extremely demanding forms for completing by uniformed and illiterate farmers and the targets group who are basically seeking relatively small loans.

Bilateral/Multilateral Institutions Efforts

The world Bank Group and the International monetary fund’s efforts at assisting countries to understand to understand the poverty situation in their economy assess the level and determine to reduce the level, knowing that most developing economies are held back with debt obligations, have proved quite successful in most developing countries. It has helped Nigeria to open up again discussions with our creditors and have enabled us reschedules our debt at very accommodation concessions at the pairs club group of creditors. The world Bank and the IMF determined in 1999 that nationally owned participatory poverty reduction strategies should provide the basis for all their concessional lending and debt relief under the enhanced Heavily Indebted Poor Countries (HIPC) initiative. This approach builds on the principles for the comprehensive
development papers on poverty reduction strategy by country authorities for submission to the Bank and fund boards. There are core principles underlying the development and implementation of poverty reduction strategies and these are as follows:

a) Country-driven, involving broad-based participation by civil society and the private sector in all operational steps.

b) Result oriented and focused on outcomes that would benefit the poor.

c) Comprehensive in recognizing the multi-dimensional nature of poverty, but also prioritized so that implementation is feasible both fiscal and institutional terms.

d) Partnership oriented, involving coordinated participation of development partners (bilateral, multilateral and non governmental).

e) Based on a long-term perspective for poverty reductions the world Bank Created no blue print for building a country’s poverty reduction strategy. Rather they established key processes which should reflect a country’s individual circumstances and program, there is the need to develop a comprehensive understanding of poverty and its determinants, beginning with an understanding of who the poor are, where they live and their main barriers to moving out of poverty. Furthermore, the multi dimensional nature of poverty (low income poor health and education, gender, insecurity power lessness etc) needs to be carefully, considered.

Micro-Finance Model for Nigeria Poverty Alleviation Strategy

Starting from the conceptual dimension of transfers of wealth and transfers through government fiscal operation, one will want to agree that in the current dispensation the country can afford realistically to adopt a model of transfer from the rich through the government fiscal operation and from the government through deliberate fiscal allocation to the poor to implement program that will alleviate poverty. Nigeria must pursue a progressive micro-finance model. The program must be such that will assist the totality of the needs of the groups that will participate. The credit must facilities production (economic activities), consumption (hunger etc.), social/welfare (health, education etc). The program must be such can serve as seed capital to provide fund for the development of promising ideas or products including the development of prototype. There are many school leavers with promising ideas and many handicraft workers who need only need only small seed capital to move out poverty.

The program must be such that can finance start-ups by providing funds for commercial production and marking, developed ideas and products. It should be available to finance expansion of commercially viable/successful business in order that the operator will not sink back into poverty. Consequently, micro finance model for Nigeria should be such that would have, the linked institutional framework coupled with fiscal support for
effectiveness. The chart showed the flow of revenue to the program and the
credit service required of the program. The services must ensure the
following:
i. Operations are concentrated in rural areas and focus on the micro
enterprises.
ii. Ensure working capital loans. As regard credit, most micro-
entrepreneurs need working capital loans.
iii. Do not include restrictions concerning the use of loan, allow for
guarantee that matches their capacities such as personal guarantees
and peer pressure. However, in implementing the strategy through
the new institution, it would be quite instructive to utilize the result
of the poverty assessment in order to establish priorities for
financing. First, identify regions with high level of poverty and
organize them into cohesive groups. Second, determine what
transfer programmes you want to adopt. For example, grain coupon
etc, which could be used as collateral to access micro-credit which
could alleviate poverty. These regions would e pilot projects with
adequate supervisory, monitoring and evaluation teams, for
replicating in other regions. More importantly is the need to have
financial regulatory authority to be part of the team for effectiveness
and for completeness considering the current dispensation of
Universal Banking.

Principles for Effective Micro-Finance Institution
The experience of micro-finance lending in Nigeria had not been quite
successful from the formal statement of the success of informal model.
However, most poor seem to appreciate informal lending. In order that the
proposed model where we have linked institution ti purvey credit work
successfully, the following principles should be considered to avoid the pitfall of
the past institutions:

a. **Simplify services;** make the credit program customer-friendly. Use a
   simple application process (often not exceeding one page) appropriate to
   low levels of literacy and innumeracy and streamline operations to
   minimize staff time per loan,

b. **Offer small initial loans:** start with very small loans appropriate for
meeting day to day financial requirement of micro enterprises and
motivate repayment by offering larger loans as incentives for repeat
customers. CBN ECONOMIC & FINANCIAL REVIEW. VOL. 39
NO.4
c. **Localize services, focus on scale:** Locate close to entrepreneurs (in small scale industrial estates, villages etc). Select staff from local communities, including people with lower levels of education (and salaries) rather than from staff in formal banks. Locate where there is a critical mass of client in order to reduce transaction costs. Micro-finance programs reach sustainability in part by making large volume of loans.

d. **Motivate repayment:** Motivate repayment via group solidarity and joint liability. Group lending is efficient because it externalizes cost. Character-based lending to individuals (as opposed to groups) can be effective where the social structure is cohesive and there is little potential for abuse.

e. **Recognize that the poor do save:** Credit program are more sustainable when they are financed with personal savings. Savings are often half of informal finance. However, accepting deposits is labour-intensive and therefore quite costly. Moreover, unstable programs can rob the poor of their savings. Great care must be taken when an institution accepts fiduciary responsibilities.

f. **Charge full-cost interest rates (Factoring in inflation, loan losses and delinquency and the cost of loan funds).** The administrative costs of lending to the poor require interest rates that are substantially higher than rates charged by commercial banks. Micro entrepreneurs have shown a willingness to pay high rates for services that meet their needs. (CBN Economics and financial Review, 2004)

**Conclusion**

This paper has established that micro-finance is indeed a strategy of poverty reduction. More importantly is the model of purveying credit to the poor as discussed in section two. It is a progressive strategy for Nigeria to have developed a strong linked institution by merging the formal, semi, formal and informal institutions that has in the past purveyed credit to the poor under one umbrella eg. NACRDB.

Looking ahead to the future of micro-finance programs in Nigeria, several conclusions could be drawn. First, there is significant room for improvement within the current programs using principles and practices established in this paper. Second, the unique conditions in Nigeria of having the best of time in revenue generation through oil wind fall, efforts must be made to strengthen the institution that have been merged, to also reduce poverty level before the 2003 election. The higher the level poverty in any democratically run economy, the lower the score for good governance. Third, micro-finance could still be run by other financial institutions in spite of the linked merger of NACRDB. However, serious issue of supervision must be tabled and discussed.
thoroughly with the financial sector regulatory authorities. Fourth, issues concerning training should be viewed seriously. As shown, poverty is deep in Nigeria and education has been shown in the poverty assessment study to be negatively related to poverty. Training should not be restricted to reading and writing but more importantly to skills acquisition for those who had attended primary education and apprenticeships for some vocational jobs.

Fifth, is the issue of fiscal/budget subvention to micro-finance program. This is a challenge to the government and the regulatory environment. In conclusion, at an aggregate level, micro-finance services are a means of broadening economic participation to include marginal groups that have been left out previously. The main benefit is the heightened political stability that flows from having more stakeholders participate in the resource endowment of the country and thereby push growth and development to a sustainable level.

References


BILLBOARDS PLACEMENT IN NIGERIAN CITIES: IMPLICATIONS

B. A. Ogunlade

Abstract
Billboard as a form of transit art is one of the many outlets of graphic communication through which products, services and messages are being exposed to wider audience. The perception of the dynamics of billboard and its communicative value can have a considerable effect on the character of an environment. This paper therefore examines billboards placement in Nigerian urban cities and the effects of their placement within the environment of display with a view to educating the public on the ideals for the enhancement of the visual appearance of its environment. It also discusses for further discussion the characteristic nature and types of billboards on Nigerian highways. Suggestions are offered on appropriate creative display and maintenance of billboards in Nigerian cities.

Introduction
With the recent trend and development in the state of urban aesthetics and communication which has been regarded as an aggregate of all existing conditions that affect the life and development of its citizenry, man lives to interact with others and appreciate the various aesthetic setting of its environments in Nigeria. In order to live successfully, he has to meet up his basic needs as when required in terms of food, shelter, clothing etc. This means that he has to explore and exploit his environment as well as to refine and transport his exploits for maximum benefits. In the process of doing this, man becomes more entangled in a web of interaction which results to political, social and economic development on the one hand and to seek the enhancement of the visual appearance of its environment on the other.

There have been various studies on urban aesthetics and communication and factors that can enhance its appreciation. Carlson (2000) observed visual pollutions as one among other major factors that affect environmental aesthetics and communication development. Visual pollution according to Carlson is a term that refers to all the ways human visual capability is deflected within the environment. Carlson noted that visual pollution could reduce the quality of perception of the people. Haphazard placement of billboards in Nigerian cities constitutes much of sort visual pollution which is fast harming the aesthetic perception of urban dwellers in Nigeria.

It is against this background that attempt is made in this paper to examine billboards placement in Nigerian urban cities with a view to educating the public on the ideals for the enhancement of the physical character and visual appearance of its environment and directing the attention of various arms of government agents in collaboration with professional bodies that are responsible...
for the maintenance of highways billboards design and advertisement to the menace posed by its hazard placement in Nigerian cities.

**Historical Background**

The concept of highway advertisement and communication system has been gaining current in many advanced countries. This belief is made strong by the fact that highway communication has some impact on the safety of life of the people as well as providing conducive environment for all. This concept equally sees the objects in the streets making up the city as figure and not mere junk. As such, emphasis has been on city planning and management which embraces all sphere physical, aesthetics, and other constructions that could harm image of the city.

The concept of billboard as a form of advertising media through which products, services and messages are being exposed to wider audience was not new either in Nigeria as it has once gained moment prior to independence. Even after independence, Nigeria like any other nation had developed various forms of billboard designs for various communication and commercial purposes which one regarded as one of the major infrastructure characteristics of an urban environment. Most of these urban environments were adorned with various forms of billboards and signposts to make life more meaningful to the dwellers. Placement of billboards for both traffic and commercial activities on day and night basic with their rhythmical arrangement were prominent.

Today, the situation appears to be different. This is because most of the structure as been destroyed and those surviving are being subsumed and besieged by weeds or hideout for destitute. The beauty of the cities are also been destroyed by poor arrangement and maintenance where billboards are carelessly drawn across various highways in the cities. Structural defective billboards, which could deprive clearer messages to the targeted audience, are being seen in most cities. Most parts of the highways in the cities have stumped with various destroyed billboards due to neglect. Rapid growth of ghetto, illegal highway signposts and sign obstructions in form of haphazard billboard placement, each directing and misdirecting, thereby constituting visual pollution are threat to visual perception. Based on the above observations, one may be forced to say that the aesthetic perceptions of city dwellers are fast deteriorating and that the Nigerian city highways are lacking pleasant appearance.

This paper surveys the aspect of city highway aesthetically placements of billboard and the need to reduce visual pollution that are often becoming threat to visual perception. It specifically examines the following for further discussion:

- (a) The concept of Billboards and usage in Nigeria;
- (b) Types and characteristics of billboards;
- (c) Factors affecting billboards placements; and
- (d) Billboards maintenance on Nigerian city highways.
Billboards Development and Usage in Nigeria

According to Steward (1993), billboards came into being as a result of the evolution of signs, which were initially associated with gesture or motion. It however gained significance in the 1390s when merchants were required to label their premises with their own signs. In the 16th century, the use of signs gained a wider currency as it was defined as any writings, including letter; pictorial presentations, illustrations and decorations banners, flags or any other figure of similar characteristics. Signs could be made into a structure, painted on with the aim to announce, direct caution or advertise a business, commodity or providing information. The significance of billboards became much in England in the 16th century. Steward (1991) noted that the merchandized were directed to mount their signs on their building surface. This encouraged the idea of house numbering for easy identification. As a result of various studies and experimentation that greeted the industrial revolution era, Davis (1965) noted that the merchandized typesetting and the movable types of printing machines were invented. These gave additional impetus to handbill placements. In the 19th century other printing techniques such as, the screen-printing, lithographic printing, etc. became more intensive. There arose a scramble for bill posting spaces. The situation degenerated into a point when street wall and all available spaces on houses were pasted with poster handbills. The local authority through ordinances, were later forced to reject careless posting of bills and the term “post no bill” become popular with many supposedly free spaces. In order to find a way out, traders began to construct signposts or billboards and sought approval for their erection.

The use of billboards in Nigeria followed after the pattern in Europe. The first billboards were erected in the 20s. The earlier Advertising companies such as; West African Publicity Companies, U.A.C, later Afromedia, etc. began to propagate the use of billboards for highway advertising, and manufacturing industries. After independence, petty trading became another business. The petty traders eventually grasped the importance of billboards, which they used maximally to boost their trade. With the economic downturn of the late 90s which made it impossible for the government to pay salaries regularly, many workers in their bids to make ends meet embraced in trading enmasse so as to improve their revenue base. Small shops and supermarkets raised considerably in all streets. Signs and billboards were grossly abused and resulted to the unpleasant situation in the cities.

Characteristics and Types of Highway Signposts / Billboards

Billboards / Signposts are expected to perform such rules as locating users in an environment providing information on merchandise, labeling of structures, embellishing or enhance beautifying the appearance of an environment as well as protecting the safety of the public, …….. and to complement the built environment effect. Therefore, these are some qualities
expected of them. All signs and lettering be it on billboard, woods, plastics, electronic system, fabrics, etc. are expected to be legible and harmonious must contain letterforms that can be seen and recognized without difficulties and register quickly in its overall shape. The background of letter forms should not interfere visually with its reading, it must be consistency in height, embrace good colour combination and the size of the letter forms should dependent on the overall environment in which the sign is to be placed. Positioning of letter also considered important and should not constitute an obstruction to consumers.

The placement of billboard in Europe and America are usually controlled by ordinances and legislation. Through ordinances such factors as the allowable square feet .height billboards, consistency with the built environment and urban beautification are cons…… paramount. The local authorities simply enact ordinances, which reflect the attitudes of community towards signs. In most cases the law provides simple, clear and environment sensitive standard for various types of advertisement.

Effects of Billboards /Signposts Placements on Nigerian City Highways

In Nigeria, the local government is mandated by the constitution and decree 211 of 1998 that the local authorities are to control and collect levies on outdoor advertisement. However, it appears that the local authorities are only interested in the money making aspects leaving aesthetic planning of the various elements that makes up the streets into the hands of the traders. In order to examine the various effects of billboard placements by the individuals on Nigerian city highways, a survey was carried out in three selected State capitals in Nigeria – Ibadan, Lagos and Kaduna in accordance with the suggestion of Nasar and Hong (1999) when they noted that appearance of the environment could be improved upon if we know how the populace reacts to features. Similarly, the reviewed literature also proved that various studies have been carried out in Europe and America that looked at environmental aesthetics from various angles. Nasar and Hong (1999) in their efforts to examine urban signscape in the United States investigated popular reactions to signscape features with the use of coloured photograph of varied signscape to elicit information, which could bring about improvement to city learning. The study revealed that respondents preferred reduction in sign obstructiveness and complexity which they believed could lead to environmental pollution. Geller et al (1982) noted that among the five urban scenes in the U.S. the commercial scene has signs and billboards that were most disliked by respondents. Their study on perceived urban duly made use of coloured photographs of the five senses revealed that visually overloaded streets and be detrimental to the quality of living.

Most of these studies seem to agree that aesthetics has to do with the analysis of concepts and the solution of problem that arises when one contemplates aesthetic objects. Aesthetic objects are capable of attract responses,
Billboards Placement in Nigerian Cities: Implications

judgment and preferences from individuals. Osborne (1970) observed that individuals can relate his aesthetic experience if he is given the opportunity to fix his attention on heterogeneous but interrelated components of a supposedly art object. The study of aesthetic generally has shown that man cannot live long without beautiful, harmonious and order environment (Spreiregen, 1965). In this study, three Nigerian cities were adopted for sampling (Kaduna, Ibadan and Lagos) because they all have both commercial and features. Questionnaire and photographs serve as the major research instrument. Questionnaire on urban street aesthetic and communication evaluation was also administered to one hundred respondents from the three areas. Out of the 100 questionnaires administered, 50 were received – 20 from Lagos, 16 from Ibadan and 14 from Kaduna. Out of the 50, 25 of the respondents were between 20 and 50 years old, 15 of them between 20 and 35 years old and 10 were above 35 years. Out of the fifty were 15 graduates, 20 undergraduate, 10 primary qualifications while 5 had no formal education. Coloured photographs of the scenes were displaced for ninety minutes. Respondents were asked to look at the displayed photograph deeply and explain their views towards the scene. Raw scores of the questionnaire were analyzed in percentages.

Forty respondents who completed the questionnaire were able to put their views are (90%) agreed that aesthetically placed sign/billboards can improve the city environment by stating that overcrowded billboards can desensitize people to their environment; 10 (10%) also viewed that overcrowding of billboards can cause visual pollution. It was noted that the residential areas are relatively quiet with beautiful structure adorn both sides of the street, the commercial areas are busy with activities and signs and placement are heavier. All respondents in the three areas were surprised and wondering how signposts and billboards were displayed in such a chaotic manner. It was noted that the signboards have been forgotten by their owners while those erecting new ones could note whether their newly erected billboard could bring more sales.

Discussion and Conclusion

It was observed that the majority of respondents wanted graphic designers to be part of city planning based on the significant roles of graphic designers in modern city planning in the usage of typography, colour study, signs layout and materials. Similarly, majority of the respondents strongly believed that signs/billboards, if properly and harmoniously placed could add beauty, excitement, vitality to the environment. Some suggested that one or two large billboards with word changeable devices would advertise for every trader in a large shopping complex rather than the chaotic sight by individuals. The use of wooding / iron plate’s signs and billboards were not encouraged because respondents felt that wooding / iron plates get rust quickly as a result of the exposure to moist, rain and sun.
From the survey result, it is obvious that aesthetically placed signs and billboards could contribute to the beauty of the streets, the built environment and the quality of living. The use of neon-signs, cold-cathode incandescent light and the computerized billboard system could bring a type of refurbishment to Nigerian city life, while the removal of low standard signs and billboards from the city streets would also enhance the much cherished vitality to the Nigerian populace.

References


INHIBITING FACTORS TO THE EFFECTIVENESS OF PHYSICAL EDUCATION TEACHERS (PETS) IN THE UNIVERSAL BASIC EDUCATION PROGRAMME IN NIGERIA

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Abstract
In Nigeria, physical education has gained a suitable niche in the education system after a checkered educational history. The paper chronicles factors capable of challenging the effective teaching of physical education in the on-going Universal Basic Education Programme of the Federal Government of Nigeria. The need for this is based on the Universal premise that primary education is the bedrock, the foundation, the pillar and the first realistic step in education of a child. If the initial orientation on which the whole system of education is dependent becomes faulty, the remaining educational levels would be compromised. The article therefore pinpointed and discussed challenges to the effective teaching of Physical Education in Primary School Curriculum Models; All comers teach physical education in primary schools, lack of adequate facilities and equipment, physical education teachers welfare and condition of service etc. It is hope that these crepancies would be corrected in order to bring about a successful Universal Education Programme in Nigeria. The paper suggested ways through which the effective teaching of physical education in primary education could be made effective in current dispensation of the UBEP.

Introduction
Several attempts has been made by subsequently government in Nigeria to affect the lives of its citizenry positively. One of such attempts is the introduction of free and compulsory Universal Basic Education (UBE) Programme, which was officially launched on September 30th, 1999 with the overall aim of improving the literacy level of Nigerians. In specific terms, the programme, according to the implementation guidelines has as its objectives the following:

(1) Developing the entire citizenry a strong consciousness for education and a strong commitment to its vigorous promotion.
(2) The provision of free Universal Basic Education for every Nigerian child of school-going age.
(3) Reducing drastically the incidence of drop-out from the formal school system (through improved relevance quality and efficiency).
(4) Catering for the learning needs of the young persons who for one reason or another have had to interrupt their school through
appropriate forms of complementary approaches to the provision and promotion for basic education.

(5) Ensuring the acquisition of appropriate levels of literacy, numeracy, manipulations, communicative and life skills as well as the ethical, moral and civic values needed for laying a solid foundation for life-long learning.

This could be said to be the right step in the right direction hence in Nigeria elementary education happens to be the bedrock and the first realistic step in the education of every child. It therefore implies that education at the primary school level should be taken with all seriousness if the objectives of education at all levels must be achieved. The National Policy on Education (NPE, 1981) deposited that the primary school level is the key to the success or failure of the whole system of education since the remaining are built up on it.

The question that arises therefore is that if the success or failure of the other levels of education is a product of the primary school level, what then should be done to constantly sustain the effectiveness of education at this level? In response to this question, the paper posits that the success of education at this level (primary school) is dependent on the availability of teachers who are devoted, committed and competent in their area of specialization (Adepoju, 1999).

Statement of Problem

There is a growing advocacy for the production and employment of quantitative and qualitative teachers to man the educational system especially the primary and secondary schools in Nigeria (Oluchukwu, 1988, Tahir, Umar and Buri 2000). This demand for more teachers in schools in Nigeria indeed encapsulates specialists in physical education.

Coincidentally, physical education happens to be one of the subject being offered at the primary school level and going by the aforementioned factors it thus implies that physical education at the primary school level should be taken with all seriousness for the objectives of physical education at all levels of our educational system is to be achieved.

This is necessary because if the initial orientation is faulty; the remaining educational levels would be compromised. It therefore means that for stakeholders to realize the aims and objectives of physical education at all levels, the first step in the teaching of physical education must be correctly ordered.

Consequently, it is intuitive to say that the effective teaching of physical education is to a large extent dependent on the quality of teachers handling the subject. Apparently, it should not be out of tune to state that it is only the dedicated, competent and professionally trained teachers that should teach physical education because the peculiarity involved necessitates it. In actual fact this claim needs not be over flogged because it agrees with National Policy on
Education (1981) position that no educational system can rise above the quality of its teachers. In an explicit manner, Bucher (1979) explained that, it is when adequate and qualified staffs are secured for the operation of physical education programmes that the subject would be considered as worthwhile and capable of stimulating learner’s interest. In other words competent and professional teachers would be needed for the teaching of physical education at the primary school level if the field shall contribute to the effective implementation of the Universal Basic Education Programme.

Militating Factors against Teachers of Physical Education Effectiveness in Primary School:

There are many situational and psychological factors that may frost teacher’s efforts at being effective in his/her work. Among these include;

(1) Non Placement of Physical Education on the Primary School Curriculum Modules

Sequel to the effective contributions of physical education to the effective implementation of the UBE Programme, the curriculum planners must ensure that physical education takes its rightful place on the primary school curriculum. In a study carried out in former Bendel State now Edo and Delta States in 1984, the researchers discovered that most of the schools involved in the study had planned physical and Health Education curriculum (Ofeme 1984). However, the situation is different in Akwa Ibom State. Field observation made by these writers between 2000 and 2008 revealed that the “ready made” primary school curriculum modules prepared under the auspices of the National Policy on Education (1998) did not include the subject of physical education. The non-inclusion of physical education curriculum in primary school curriculum module, from which the teacher draws the subject matter he intends to disseminate educational information, may bring about inefficiency on the part of the teacher. This might even be the reason why some school administrators treat physical education with sordid disregard.

(2) All Comers Teach Physical Education in Primary School

The physical education teacher with NCE Certificate has specialized training that has equipped him with required skills for the teaching of physical education in all aspects of school life. Whereas, the grade 11 Teacher in primary school was given the curriculum to teach all the eight subjects in his/her class timetable as a classroom teacher. Even with the implementation of the educational policy of making NCE the minimum teaching qualification, the administrators in primary schools will retain NCE teachers without physical education combination to teach physical
education as a classroom teacher. The practice of allowing teachers in other subject areas to teach physical education will not give quality output. Hence the National Primary Education Commission (NPEC) and administrators of the Universal Basic Education Programme should with dispatch make it a policy that only NCE physical education teachers should teach physical education in primary schools.

(3) **Lack of Adequate Facilities, Equipment and Supplies in Schools**
Several studies have shown dearth of facilities, equipment and supplies for physical education in primary schools. (Ogunsenno 1987, Akinsanmi, 1989, Oyewusu and Ogunbenro, 1992, Akinniyi, 1994 and Ogunbenro, 1998 among others). This negative development made teaching of physical education and administration of sports difficult and neglected. Obiyemi and Abayomi (1995) have warned that for sports and physical education programmes to be successful, the desired equipment and supplies must be made available. From time immemorial, school administrators have had poor and negative attitudes towards the provision of facilities and equipment for physical education programme. The situation is so helpless that some physical education teachers in primary school don’t have the space or the equipment for physical education and sport programme. The lack and non provision of facilities and equipment may make the physical education teacher neglect the teaching of physical education and where the teacher managed with what was available or improvised, the output of such a teaching may not be of quality.

(4) **Teacher’s Welfare and Condition of Service**
Inspite of the enhanced minimum wage for workers in Nigeria, the teacher’s welfare package is still far below that of their counterparts in government and private sectors. It is the teacher’s salaries and wages that will not be paid in time as well as other end of the year benefits. It is the teachers that would be asked to take basic monthly salary without the monthly allowances. The implication of these deplorable conditions of service is that teachers have become dehumanized and are no longer committed to the teaching profession. Their output is low because the urge or the drive to make them effective is not there.

(5) **Brain Drain Syndrome:**
The brain drain syndrome here connotes the situation wherein trained and dedicated teacher do frequently leave the teaching profession. It is the steady outflow of teachers from their primary assignment to greener pasture. Most Senators, House of Representative, State House of Assemblies members, Counselors, Local Government Chairmen, some
state governors even the president were one time or the other a teacher. Many journalists, business men and women, Barristers and Engineers among others were once a teacher before leaving for a greener pasture. The worst is the primary school. Many people have regarded teaching appointment as a stepping stone to higher heights, so as soon as the physical educators’ status is enhanced or obtains a better offer of appointment in the public service, he opted out of the primary school system. This “wait and see” attitude will not make the teacher to be effective in his work. Despite this fact many primary school teachers preferred to teach in secondary school. The few teachers that are ready to stay put in primary school do so because it give them opportunity to make money from other sources and further their studies. In this kind of situation, the overall objectives of physical become difficult to achieve.

(6) The Nigerian Factor
This factor which is indigenous to Nigerians relates to the attitude of Nigerians to government work. Most Nigerian workers do not believe in hard work or even want to work at all (Dawodu, 1991), such set of workers have imbibed the idea of little work for fat money. The idea possibly could have gained recognition through society’s acceptence of hero worshipping of the “money bags” not minding the source of such wealth. The physical educator in primary school is a member of the society and so cannot be left out of this “CRAZE” of obtaining substantial amount of money for little service rendered. In view of this, most teachers in primary school often use a greater part of their working time to engage on “private practice” at the expense of the regular work. This attitude to work definitely would make work effectiveness difficult and impracticable especially in physical education that involves theory and practical.

Conclusion
The primary school is the first realistic step in the education of individual and therefore should be correctly order by making the teaching environment of the primary school teachers conducive. The paper emphasized that physical education would contribute maximally to effectively implementation of UBE programme if government would address seriously those factors affecting the physical educator effectiveness in primary schools. This paper resolved that effectiveness comes only when teachers in primary schools with NCE Certificate in Physical and Health Education are made to teach Physical Education and not teachers in other subject areas.
**Recommendation**

In order to make the teaching of Physical and Health Education effective in the University Basic Education programme.

(a) NAPHER, SD and NSHA should ensure that the educational polices in respect of physical education is strictly enforce at all level of our educational system. These two bodies should seek representation on the National Policy on Education. The realization of the above would facilitate the acceptability of physical education programme in schools.

(b) NAPHER, SD and NSHA should work out a way of sending qualified personnel to the inspectorate division of the ministries of education to assist in inspecting physical education and Physical Education Teachers at work in Primary and Secondary schools.

(c) All the three tiers of government should make funds available for the procurement of facilities and equipment as well as maintenance in order to make physical education contribute maximally to the effective implement of the Universal Basic Education programme.

(d) The welfare and condition of service of the Physical education teachers should be improved upon. The Federal Government should make a categorical statement on whom to pay the salaries and wages of the primary school teachers.

(e) The three tiers of government should think of paying a substantive amount to physical education teachers as game master allowances to boast their interest in practical, thus the effective teaching and maximizing the learning of the subject in the UBE programme.

(f) Only primary school teachers with NCE certificate in physical education should teach physical education in primary schools.

**References**


Inhibiting Factors to the Effectiveness of Physical Education Teachers (PETS) in the Universal Basic Education Programme in Nigeria


