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Guest Editors

Jacinta A. Opara, PhD
Shobana Nelasco, PhD
Peter U. Akanwa, PhD
Gerhard Berchtold, PhD
Austin N. Nosike, PhD

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Introduction

I have the pleasure to furnish you herewith this JESR Special Issue which contains a collection of some selected papers presented at ICTL2012; ICESR2012; ICBER2012 and ICSCS 2012 conferences organized by African Society for Scientific Research and African Association for Teaching and Learning in cooperation with several partners. We wish to express our sincere thanks to the Governing Council, Management and Senate of the Ignatius Ajuru University of Education; Rivers State University of Science and Technology and FCT Education Resource Center, Abuja-Nigeria for providing the venue and facilities for the conferences and for being committed to towards ensuring the success of the conferences. We are grateful to Professor M.O.N. Obagah and Professor M.P.Pagar. We thank the management and staff of the above named institutions for their cooperation and support for the project. We express our profound gratitude to all and sundry especially our Special Guests, delegates, reviewers, the media, the Nigerian foreign missions and all the cooperating partners for their contributions in promoting these noble academic events.

Please read on!!!

Dr Jacinta A. Opara

President, African Association for Teaching and Learning and Visiting Associate Professor, Universidad Azteca, Chalco-Mexico
An Economic Analysis on the External Debt Burden of South Asian Countries

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Abstract

The external borrowing has become indispensable for the modern world. All developed and highly competitive countries are involved in heavy amount of external borrowing. External debt of Asian Developing Countries continues to increase especially during the last three decades. This paper focuses on the external borrowing of South Asian countries especially after the year 2000 and the analysis is done on three major economic fronts. First the overall growth of external borrowing is studied using line chart and with the help of a regression model along with a short study on ranking of these countries among other countries of the world. Secondly the external borrowing is analysed using few indicators over a period of time from 2000. Over this analysis, the line demarcation between actual amount of borrowing and borrowing burden are delineated using the debt indicators and their graphical presentation. Finally eight economic and non-economic factors were identified and these factors were regressed with dependent variable, External Borrowing. And the type of influence and intensity of influence were analysed. The first two analysis helps us to examine the intensity of debt burden of these countries, while the last analysis helps the countries to identify the factors that influence the external borrowing of the country and to adjust those factors according to the welfare requirement of the country.

Keywords: South Asian Debt – growth of external debt - debt indicators – economic and non economic factors affecting debt.

Introduction

External debt means debt owed by one country to another. It refers to the obligations of a country to foreign governments or foreign nationals or international institutions. External debt is inclusion of Public Debt, Public Guaranteed Debt and Private Non-guaranteed Debt Public debt is an external obligation of a public debtor, including the national government, a political subdivision and autonomous public bodies. Public guaranteed debt is an external obligation of a private debtor that is guaranteed for repayment by a public entity. Private non-guaranteed debt is an external obligation of the Private Debtor that is not guaranteed for repayment by a public entity, that is, by the government of the country in which the private debtor lives.

Indispensability of External Borrowing

External borrowing was not heard of prior to eighteenth century. The classical economists were against public debt. But according to Keynes depression and unemployment are due to deficiency of demand, which has to be rectified by government expenditure financed by borrowing. The private resources may remain unemployed for relatively long periods if corrective or compensatory action is not taken by the government. For such efforts, in periods of business depression and heavy
unemployment, the government may have to borrow for promoting employment and national income. Again developing countries have lot of unutilised, under-utilised and mis-utilised natural, physical and human resources. For making use of these resources to the optimum level, developing countries resort to borrowing.

Of late borrowing is universally accepted as a method of financing the economic development of the country. Generally the faster growth of government expenditure in relation to the growth of the revenue leads to the necessity of borrowing. The process of capital formation and industrialisation which require heavy investments in infrastructure like roads, railway lines, irrigation channels and power houses forces the government to go for external borrowing. Speedy industrialisation necessitates heavy import of capital goods such as machinery and equipments and technical know-how from abroad. The governments have to borrow heavily from foreign countries to make up the deficit in the balance of payments, caused by heavy imports.

External borrowing becomes unavoidable during times of war, famine, flood storm, tsunami, epidemics, earth-quacks and other such natural calamities when urgent investments and relief works are needed. Hence external borrowing is indispensable. It was during the Second World War that the technique of borrowing was recognised as an important method in war financing by most of the countries. Of late the costly modern war preparation of different countries has resulted in mounting borrowing.

However, if public debt increases continuously on its own momentum and does not increase national income, it may aggravate inflation and becomes a source of weakness if there is failure to utilise the loan productively. If public debt is utilised for building capital assets, it does not aggravate inflation nor create any burden for the community. Investment in such projects increases income which enables the country to pay off capital and interest without much difficulty. On the other hand, misallocation of loanable funds may take a country to a debt trap.

Many external Factors like the Transfer Problem, Oil Shock, global Wars, international Inflation, variable Interest Rates, export Shortfall, trend in International Lending, the Policies of the Developing Countries, imprudent Lending Activities of Commercial Banks, the Incorrect Estimation of the Risks, borrowing Patterns, attitudes of Industrialized Countries etc became responsible for galloping rise in external borrowing. Some domestic causes were also responsible for the problem. IMF has identified 43 countries as Highly Indebted Poor Countries (HIPC).

### Area of Study

Asia is the largest continent in the world. Based on the regions, Asian Developing Countries\(^1\) are divided into South-East Asian countries, the South Asian countries, Central Asian Economies and Pacific DMCs.

Southern Asia, is the southern region of the Asian continent, which comprises the sub-Himalayan countries. South Asia is surrounded (clockwise, from west to east) by Western Asia, Central Asia, Eastern Asia, Southeastern Asia and the Indian ocean. **South Asia consists of Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.**

Some definitions may include Afghanistan, Burma, Tibet, and the British Indian Ocean Territories. Some definitions may exclude Pakistan. South Asia is home to over one fifth of the

---

world’s population, making it both the most populous and most densely populated geographical region in the world. The total population of this region in 2011 was 1678 million.

External debt of Asian Developing Countries continues to increase especially during the last three decades. The oil price hike in 1970s, international debt crisis of eighties and Asian crisis of nineties became the most important factors responsible for a phenomenal increase.

Methodology

To study the intensity of external borrowing of South Asian Countries is a very broad area. But this paper is concentrating on three major areas of studies in external borrowing. First the overall growth of external borrowing is studied using line chart and with the help of a regression model along with a short study on ranking of these countries among other countries of the world. Secondly the external borrowing is analysed using few indicators over a period of time from 2000. Finally eight economic and non-economic factors were identified and these factors were regressed with dependent variable, External Borrowing. And the type of influence and intensity of influence were analysed. The first two analysis helps us to examine the status of the country in case of external borrowing, while the last analysis helps the country to identify the factors that influence the external borrowing of the country and to adjust those factors according to the welfare requirement of the country.

Asian Country’s borrowing in the world

It is important to go through the status of all Asian countries in the world. India tops the rank with nearly 62.07% of the total and is standing in the 29th position in the world.

The highly competitive and developed countries like United States, United Kingdom, Germany, France, Italy, Netherlands, Spain, Japan, Ireland, Switzerland, Belgium, Canada, Sweden, Austria, Australia, Hong Kong, Denmark, Norway, China, Greece, Russia etc are in the top list of External borrowing. USA has 76 times that of India’s external borrowing.

<table>
<thead>
<tr>
<th>Debt Outstanding US $</th>
<th>World Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>132,100,000,000</td>
</tr>
<tr>
<td>Pakistan</td>
<td>42,380,000,000</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>22,550,000,000</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>12,230,000,000</td>
</tr>
<tr>
<td>Nepal</td>
<td>3,070,000,000</td>
</tr>
<tr>
<td>Bhutan</td>
<td>593,000,000</td>
</tr>
<tr>
<td>Maldives</td>
<td>482,000,000</td>
</tr>
<tr>
<td>SouthAsian TotalDebt</td>
<td>212,812,000,000</td>
</tr>
</tbody>
</table>

Source: [http://www.geographyiq.com/ranking/ranking_Debt_External_dall.htm](http://www.geographyiq.com/ranking/ranking_Debt_External_dall.htm)

Hence the absolute borrowing is not the major factor that will decide the indebtedness of the country. Hence this paper also focuses on the few indicators of indebtedness. Based on international debt indicators, countries are categorised as severely indebted, highly indebted, moderately indebted and less indebted etc. Few of the debt indicators are as follows:

- Ratio of total external debt to exports of goods and services

~ 13 ~
• Ratio of total external debt to GNI
• Ratio of total external debt service to exports
• Ratio of Total long-term debt percent of total debt
• Ratio of total Short-term external debt to external debt stocks
• Ratio of Principal repayment on long term debt
• Ratio of Interest on long term debt
• Ratio of Interest on short term debt
• Ratio of Multilateral to external debt stocks
• Ratio of Reserves to external debt stocks
• Ratio of Reserves to imports (months)

These indicators are used to sort out countries for their level of Indebtedness. But in this chapter, we are analyzing only three major indicators viz. Ratio of total external debt to exports of goods and services, Ratio of total external debt to GNI and Ratio of total external debt service to exports. As of December 2011, the HIPC program has identified 39 countries (33 of which are in Sub-Saharan Africa) as being potentially eligible to receive debt relief based on the intensity of their debt burden. Afghanistan, Benin, Bolivia, Burkina Faso, Burundi, Cameroon, Central African Republic, Republic of Congo, Democratic Republic of Congo, Ethiopia, The Gambia, Ghana, Guinea, Bissau, Guyana, Haiti, Honduras, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Nicaragua, Niger, Rwanda, São Tomé and Príncipe, Senegal, Sierra Leone, Tanzania, Togo, Uganda, Zambia are the 32 post decision point countries. Chad, Côte d’Ivoire, Comoros and Guinea are the four interim countries ranging between decision and completion point, Eritrea, Somalia and Sudan are the three pre decision point countries.

Growth of Total External Borrowing of Asian Countries

This passage studies about the growth of External borrowing since 2000. The data given in the table are graphed for better preview. The graph shows clearly that the line graph of India is in the top with heavy borrowing and next comes the Pakistan in the region of South Asia.

<table>
<thead>
<tr>
<th>Total External Debt of South Asian Countries (US $ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
</tr>
<tr>
<td>2000</td>
</tr>
<tr>
<td>2001</td>
</tr>
<tr>
<td>2002</td>
</tr>
<tr>
<td>2003</td>
</tr>
<tr>
<td>2004</td>
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<tr>
<td>2005</td>
</tr>
<tr>
<td>2006</td>
</tr>
<tr>
<td>2007</td>
</tr>
<tr>
<td>2008</td>
</tr>
<tr>
<td>2009</td>
</tr>
</tbody>
</table>

Source: UNDP HDR Reports upto 2012

Fact Sheet, Debt Relief Under the Heavily Indebted Poor Countries (HIPC) Initiative, December 15, 2011
The graph shows that line chart of India is in the top of all other country’s lines. Next comes Pakistan. Remaining countries does not have very heavy borrowing. India's borrowing gallops after 2005 to a greater extent.

**Trend analysis on the growth of External Borrowing - 2000-2009**

The line of best fit is worked for all the south Asian countries during the period from 2000 to 2009 and the $\alpha$ and $\beta$ values are registered in the model of best fit. And they are as follows:

- **Bangladesh**
  \[ Y = 13852.067 + 959.352X \]  
  \( R = 0.970 \)

- **Bhutan**
  \[ Y = 193.933 + 65.048X \]  
  \( R = 0.948 \)

- **India**
  \[ Y = 57843.733 + 16538.885X \]  
  \( R = 0.933 \)

- **Maldives**
  \[ Y = 73.733 + 66.23X \]  
  \( R = 0.971 \)

- **Nepal**
  \[ Y = 2679.267 + 106.533X \]  
  \( R = 0.956 \)

- **Pakistan**
  \[ Y = 26787.133 + 2071.121X \]  
  \( R = 0.851 \)

Based on the analysis the annual growth of external borrowing of Bangladesh is at a rate of US $ 959 million, while Debt of India grows at an annual rate of 16538.885 million US $. The annual Debt of Nepal grows at a rate of 106.533X million US $, per annum, while that of Sri Lanka is 908.3 million US $. The annual growth of Maldives and Bhutan are very less viz. 66.23 million US $ and 65.048 million US $ respectively. 2071.121 million US $ is the annual growth of external borrowing for Pakistan. Thus it is very clear that India's growth of total external borrowing is very high followed by Pakistan.

**Growth of total external Debt as percent of GNI**

This analysis is done by dividing the total external borrowing by the Gross National Income of that country during that year. The tabular data are derived from the Reports of Key Indicators for Asia and Pacific.
While analysing the total external Debt as percent of GNI, in reverse to the earlier analysis on total external debt, India is in the extreme lower edge. Whereas the Bhutan and Maldives, which had very low total debt are in the top most layer while comparing the same with GNI. Anyhow Bhutan position is going on improving from 2004.

**Growth of total external Debt as percent of exports**

The external debt is divided by the total exports of the country and the ratio is presented in the table. This ratio is also considered as a crucial indicator for studying the intensity of the
Once again this indicator shows that Bhutan is in the worst position. Nepal and Pakistan are the next. Maldives and India are in the best possible position.

**Total Debt Service Paid by Asian Countries**

Debt Service shows the debt service payments on total long-term debt, (Public and publicly guaranteed and private non-guaranteed), use of IMF credit and interest on short-term debt. The following table presents the same in million US Dollars.
The table shows very openly and clearly that India pays heavy debt service. And the rest of the countries does not have that much burden. Sri Lanka is comparatively paying more debt service.

**Total Debt Service Paid as percent of exports or Debt-Service Ratio**

Total Debt Service Paid as percent of exports what is commonly known as the Debt-Service Ratio is a common ratio used to assess a country’s creditworthiness. It is the ratio of a country’s debt service payments to exports. It is the most commonly used measure of a country’s debt situation, calculated as total interest payments plus repayments of principal on medium- and long-term debt, as a percentage of exports of goods and non-factor services (that is, exports of goods and services excluding interest and profits on loans and investment abroad and remittances of workers).

<table>
<thead>
<tr>
<th>Year</th>
<th>Bangladesh</th>
<th>Bhutan</th>
<th>India</th>
<th>Maldives</th>
<th>Nepal</th>
<th>Pakistan</th>
<th>Sri Lanka</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>10.5</td>
<td>17.5</td>
<td>4.2</td>
<td>7.5</td>
<td>27.9</td>
<td>12.1</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>9.6</td>
<td>17.9</td>
<td>4.6</td>
<td>7.8</td>
<td>28.0</td>
<td>11.8</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>10.2</td>
<td>20.9</td>
<td>4.4</td>
<td>10.4</td>
<td>23.3</td>
<td>11.7</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>8.2</td>
<td>5.1</td>
<td>29.2</td>
<td>3.7</td>
<td>10.1</td>
<td>20.5</td>
<td>8.9</td>
</tr>
<tr>
<td>2004</td>
<td>7.0</td>
<td>8.8</td>
<td>14.5</td>
<td>4.7</td>
<td>9.0</td>
<td>26.3</td>
<td>10.2</td>
</tr>
<tr>
<td>2005</td>
<td>7.5</td>
<td>4.7</td>
<td>14.9</td>
<td>7.2</td>
<td>8.2</td>
<td>12.3</td>
<td>5.3</td>
</tr>
<tr>
<td>2006</td>
<td>5.4</td>
<td>5.2</td>
<td>8.6</td>
<td>5.2</td>
<td>9.9</td>
<td>10.7</td>
<td>10.5</td>
</tr>
</tbody>
</table>
This indicator shows that India and Pakistan are in the top. Anyhow both of their position is becoming better of as their lines are coming down. Bhutan’s debt service in relation to its export is very high in 2008 and for India in 2007. Anyhow both of their positions are improving.

Factors affecting External Borrowing between 2000 and 2009

It is essential to study all the factors that are affecting the debt, because debt has become a major entity in deciding any country’s development. There are some macro economic and non-economic variables that contribute towards the growth of external debt either directly or indirectly. If the countries identify those factors, it will become easy for them to alter the debt and its pattern either by increasing those factors or by decreasing those factors. In this analysis eight macro variables were considered for studying their impact and influence on the debt outstanding of that country and we assume ceteris paribus. Eight variables are taken as independent variables (X) and external borrowing is considered as dependent variable (Y). The independent Variables are Population (X1), FDI(X2), International Reserve (X3), Exchange Rate (X4), GDP Per Capita (X5), GNI Per Capita(X6), Exports(X7) and Imports (X8).

The data used for this analysis involves, ten year data of Population, FDI, International Reserve, Exchange Rate, GDP Per Capita, GNI Per Capita, Exports and Imports of all the seven South Asian countries over a period of ten years. The data source used in Key Indicators of Asian and pacific’ published by ADB. As the data runs to many pages, they are excluded from this paper. But the result of the analysis are presented as follows
Factors affecting External Borrowing of Bangladesh

Multiple Regression is applied and the line of best fit is framed for Bangladesh as follows:

\[ Y = 155177.741 + 1567.225 X_1 - 1.510 X_2 - 0.114 X_3 - 413.848 X_4 - 30.550 X_5 + 0.371 X_7 - 0.187 X_8 \]

The variable GDP Per Capita \((X_5)\) is removed due to the existence of co-linearity. After the study, it is found out that Population \((X_1)\) and Exports \((X_7)\) are affecting the external borrowing of Bangladesh positively, whereas factors like FDI \((X_2)\), International Reserve \((X_3)\), Exchange Rate \((X_4)\), GNI Per Capita \((X_6)\) and Imports \((X_8)\) are affecting the external borrowing negatively.

Factors affecting External Borrowing of Bhutan

The line of best fit is fitted for the External Borrowing of Bhutan

\[ Y = -8385.128 + 13583.106 X_1 - 1.242 X_2 - 2.369 X_3 + 18.746 X_4 + 0.079 X_5 + 0.097 X_6 + 0.842 X_7 + 0.034 X_8 \]

The factors like Population \((X_1)\), Exchange Rate \((X_4)\), GDP Per Capita \((X_5)\), GNI Per Capita \((X_6)\), Exports \((X_7)\) and Imports \((X_8)\) are positively influencing the external borrowing of the country, whereas the factors like FDI \((X_2)\) and International Reserve \((X_3)\) are affecting the external borrowing negatively.

Factors affecting External Borrowing of India

The equation for the External Borrowing of India in relation to the independent variables is as follows:

\[ Y = 303925.818 - 306.518 X_1 + 1.805 X_2 + 0.519 X_3 + 2293.624 X_4 - 49.556 X_5 + 138.074 X_6 - 0.253 X_7 + 0.035 X_8 \]

Population \((X_1)\), GDP Per Capita \((X_5)\) and Exports \((X_7)\) are the factors growing in opposite direction, while factors like FDI \((X_2)\), International Reserve \((X_3)\), Exchange Rate \((X_4)\), GNI Per Capita \((X_6)\) and Imports \((X_8)\) are growing in the same direction with external borrowing.

Factors affecting External Borrowing of Maldives

While the actual trend of external borrowing and actual trend of all the variables are worked out for its dependency in external borrowing, the result is as follows:

\[ Y = 2327.523 - 20.598 X_1 + 0.657 X_2 + 0.165 X_3 + 232.904 X_4 - 0.052 X_5 + 0.165 X_6 - 1.763 X_7 + 0.876 X_8 \]

The external borrowing of Maldives is negatively influenced by GDP Per Capita \((X_5)\), Exports \((X_7)\) and positively influenced by Population \((X_1)\), FDI \((X_2)\), International Reserve \((X_3)\), Exchange Rate \((X_4)\), GNI Per Capita \((X_6)\) and Imports \((X_8)\).

Factors affecting External Borrowing of Nepal

\[ Y = 704.071 + 235.523 X_1 + 0.126 X_3 - 37.826 X_4 + 0.248 X_5 + 2.619 X_6 - 1.704 X_7 - 0.162 X_8 \]

FDI is excluded from the calculation of multiple regressions as continuous data was not available. And with regard to remaining variables it was found that Exchange Rate \((X_4)\), Exports \((X_7)\) and Imports \((X_8)\) are negatively related, while the remaining are positively related.
Factors affecting External Borrowing of Pakistan

The line of best fit for external borrowing in relation to few economic and non-economic variables are drafted and the result is presented in the following equation.

\[ Y = 371518.445 - 1437.885 X_1 + 2.374 X_2 + 240.793 X_4 - 233.959 X_5 + 512.285 X_6 - 1.163X_7 - 0.342X_8 \]

FDI \( (X_2) \), International Reserve \( (X_3) \), Exchange Rate \( (X_4) \), GNI Per Capita \( (X_4) \) and Imports \( (X_8) \) are the five factors that affect the external borrowing directly. In other words the increase in these factors raises the external borrowing of these countries, whereas Population \( (X_1) \), GDP Per Capita \( (X_5) \) and Exports \( (X_7) \) are the factors that negatively influence external borrowing.

Factors affecting External Borrowing of Sri Lanka

The worked out multiple linear regression for Sri Lanka's external borrowing in relation to the eight factors are as follows:

\[ Y = 147575.571 - 8647.117 X_1 - 7.181 X_2 + 4.093X_3 + 215.642 X_4 - 2.240X_6 - 4.684 X_7 + 3.991X_8 \]

Population \( (X_1) \), FDI \( (X_2) \), GNI Per Capita \( (X_6) \) and Exports \( (X_7) \) are the factors that negatively affect external borrowing, whereas International Reserve \( (X_3) \), Exchange Rate \( (X_4) \) and Imports \( (X_8) \) are the factors that affect external borrowing positively. GDP Per Capita \( (X_5) \) is removed from the application due to the existence of multi-co linearity.

To conclude this analysis, the governments has to understand the fact that if a the factors that affect the debt outstanding negatively. The increase in such a variable is decreasing the debt. Hence the government can give priority for that, while the positive factors rise along with debt. Hence government should take effort to reduce those factors.

Findings and Conclusions

India tops the rank with nearly 62.07\% of the total and is standing in the 29th position in the world.

India is in the top of all other country’s in case of total debt outstanding. Next comes Pakistan. In case of total debt service paid also, India tops whereas the Sri Lanka follows.

While analysing the total external Debt as percent of GNI, in reverse to the earlier analysis on total external debt, India is having very less debt.

In case of total External Debt as percent of exports of goods, services and income also India is in the lowest amount of debt followed by Bhutan.

Total Debt Service Paid as percent of exports or Debt-Service Ratio indicator shows that India and Pakistan are in the top

While studying the annual growth total external borrowing, India’s growth of total external borrowing is very high followed by Pakistan.

Next analysis is on factors affecting external borrowing. Few factors are identified and are sorted out as negatively influencing factors and few others as positively influencing factors. If the countries take sincere effort to decrease the factors affecting the borrowing positively and to take effort to increase the factors affecting negatively, it can alter the actual amount of debt. But based on the indicators of external borrowing considering the welfare and growth of the countries after making a serious analysis on the risk factor, factors should be altered for the country’s better performance. Again borrowing can be a boon or bane for the country's growth and welfare depending upon how the country uses the same for productive or unproductive purposes.
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Vocational and Technical Education in Nigeria: Issues, Problems and Prospects’ Dimensions (IPP)

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Abstract

Vocational education deals with the training or retraining designed to prepare individuals to enter into a paid employment in any recognized occupation. On the other hand technical education deals with the training of technical personnel for the purposes of initiating, facilitating and implementing the technological development of a nation and create the basic awareness of technological literacy to our youths. In Nigeria, the training of technical personnel has witnessed formidable challenges ranging from poor funding to inadequate facilities, brain drain, poor staff training and defective curricular. This paper intends to critically examine the issues, problems and prospects of vocational and technical education in Nigeria and suggest ways to improve the teaching and learning of vocational/technical education with enhanced enthusiasm and vibrancy.

Keywords: Vocational, Technical, Education, Issues, Problems and Prospects.

Introduction

Vocational education is defined as any form of education whose primary purpose is to prepare persons for employment in recognized occupations (Okoro, 1993). It is obvious therefore that vocational education is a term that is more all-embracing than technical education which O. M. Okoro defines as post-secondary vocational training programme whose major purpose is the production of technicians. The Nigerian National Policy on Education defines technical and vocational education as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. Technical education can therefore be seen as the formal training of persons to become technicians in different occupations. Thus any education that is geared towards teaching technical skills and attitudes suitable to such skills can be regarded as technical education.

In his own views, Uwaifo (2009) posited that technical education is the training of technically oriented personnel who are to be the initiators, facilitators and implementers of technological development of a nation. He opined that this training of its citizenry on the need to be technologically literate, would lead to self-reliance and sustainability. He stressed that technical education more than any other profession has direct impact on national welfare.

Furthermore, technical education contributions are widespread and visible ranging from metal work technology, mechanical/automobile technology, electrical and electronic technology, building and woodwork technology etc. Consequently, technical education can serve as change agents not only for technical systems but also for many other societal changes. The practical nature of technical
education makes it unique in content and approach thereby requiring special care and attention. The inputs of technical education are, so visible to the extent that even an illiterate could see when failures occur.

Under critical examination, vocational and technical education have been an integral part of national development strategies in many societies because of the impact on human resource development, productivity and economic growth. Despite their proven contributions does Nigeria seem to give vocational and technical education the attention they deserve? Does that appear to be one of the reasons for the rising unemployment and poverty in the society?

This paper therefore seeks to explore the issues, problems and prospects of vocational/technical education in Nigeria.

Issues

It has been noted that vocational education is designed to offer training to improve individual’s general proficiency, especially in relation to their present or future occupation. The provision of vocational and technical schools has a long history. Before the industrial revolution (between 1750 & 1830) the home and the “apprenticeship system were the principal sources of vocational education. Societies were however forced by the decline of handwork and specialization of occupational functions to develop institutions of vocational education. As the Columbia Encyclopedia of 2001 noted manual training, involving general instruction in the use of hand tools was said to have developed initially in Scandinavia (C. 1866).

However, vocational education became popular in the elementary schools in the United States after 1880 and developed into courses in industrial training, book keeping, stenography and allied commercial work in both public and private institutions. Some of the early private trade schools in the US include Cooper Union (1859) and Pratt Institute (1887). The number of public and private vocational schools has greatly increased since 1900.

However, vocational and technical education have continued to thrive in many societies. Unfortunately, Nigeria is not taking the issues of vocational and technical education seriously. Although vocational and technical education seem deficient in citizenship or leadership training (Friedman, 1982), they could provide student the skills to become productive entrepreneurs and engender creative and innovative ideas that would enlarge the nation’s economic pie, and increase personal freedom.

Thus the neglect of vocational and technical education is socially injurious as it rubs the nation of contribution the graduates would make on national development. More importantly, the Nigerian society needs competent auto mechanics and truck drivers, carpenters, plumbers, electricians (to maintain the NEPA plants), computer database technicians and web/network technicians, medical technicians and vocational nurses to function well. The half-baked road-side mechanics in the society often cause more damages to vehicles when they are contracted to service them, and because of poor training some of the commercial drivers on the road and nurses assistants in the hospitals have sent many people to their early death.

Without gainsaying, the current preoccupation with university education in Nigeria reduces economic opportunities of those who are more oriented toward work than academics. Not every one needs a university education. But who would employ them if everyone became a university graduate? As mentioned earlier, graduates of vocational and technical institutions are highly skilled entrepreneurs. Many of the so-called “expatriate engineers: who are being paid huge sum of money in dollars to build the roads and bridges in Nigeria are graduates of vocational colleges, yet, Nigeria is not taking the sector seriously.
The issue of youth unemployment appears to be shooting up the sky because many of them lack “employability” skills that are often acquired from vocational schools. The nation’s poverty level was put at 70% and more than 91 million Nigerians are said to live on less than one dollar per day. Also it has been well documented that Nigeria’s higher institutions lack the tools to give students the skill employers need. It is evident that Nigeria has teething problems in vocational and technical education. Let us examine some of these major problems.

Problems

The challenges or problems mitigating the training of technical education or vocational education are:

1) **Funding**: Universities in Nigeria are owned and funded by the Federal Government, state government and private individuals. Over the years, government subventions to universities have never been adequate but at the same time governments maintain the policy that universities should not charge fees it deemed adequate to complement the financial effort of the government. In Nigeria, the allocation to education as a share of the GDP is quite minimal. Till date, government funding of vocational and technical education programmes have not been impressive.

2) **Facilities**: Most technical education departments in Nigerian universities do not have laboratories or workshops space let alone usable equipment and facilities and where they exist, they are grossly inadequate, as the laboratories only have the items or equipment that were provided when the departments were established. It is however most surprising to know that most technical education departments still depends on engineering workshop and lecturers to teach technical education concepts in this 21st century.

The available facilities, programme as at today are inadequate quantitatively and qualitatively and besides they are obsolete. Oryem Oriya (2005) indicated that only 40% of institutions of Higher Education in Nigeria have laboratory or workshop space for technical education programmes. The others, 60% do not have laboratory or workshop space and that this reflects the low quality of technology programmes in higher institutions. He further noted that these few universities that have laboratories, experience acute shortage of laboratory equipment and supplies. He concluded that this situation is partly responsible for the reason why it has been increasingly difficult to run experiments effectively for students and made the teaching and research in science and technology difficult and therefore the country was producing insufficient and ill-prepared technical education graduates necessary for driving the technological and socio-economic development of Nigeria as a nation.

The inadequacy in teaching, laboratory and workshop facilities has contributed to the diminution of the quality of technical education graduates in Nigeria. Reyes – Guerra (1989) categorized students into three, namely: verbalizers, visualizers and doers. The verbalizers are those who learn easily if information is in written or spoken form. They benefit from lectures, tutorials and hand-outs. Visualizers learn easily when information is presented in pictorial or diagrammatic form while the Doers learn more easily when information is presented by practical demonstration by the lecturers.

The inadequacy of facilities both qualitatively and quantitatively has put the visualizers and the Doers at a disadvantage. The verbalizers may also have problem in a class with large students population. The implication of this scenario is that only a small proportion of the students benefit from the current pedagogical system.
3) **Brain Drain**: In the context of this paper, brain drain refers to the movement of lecturers of technical education which are needed for the socio-economic and technological advancement of Nigeria from one university to other universities or to other professionals (including politics) calling for better conditions of service. Akintunde (1989) identified five different components of brain drain:

a) Experts in academics who moved to the industry where they get better pay for their services.

b) Lecturers and students who leave the country to acquire more knowledge and skill but later refused to return.

c) Lecturers who move from one country for other conditions of service.

d) Skill professionals who abandon the practice of technical education in favour of other more lucrative economic activities and political appointments which are not related to their training.

e) Skilled professionals, although in their field of training who do not devote their full attention to their job because of their effort to supplement their earnings through other unrelated economic activities.

Bassi (2004) reported that:

(i) About 45% of all Nigerian professionals including technical educators have left the Nigerian shores over the decades since colonization.

(ii) Between 1997 and 2007 alone, Nigeria lost over 10,000 middle level and high-level managers to the western economies.

(iii) About 500 lecturers from Nigerian universities continue to emigrate each year, particularly to Europe, America and other African countries where the condition of service is relatively better. These Nigerians in Diaspora contribute 35 times more wealth to Europe, America and other African economy.

4) **Staff training and retention**: The training of academic staff is ordinarily a continuous exercise to ensure consistent improvement in the quality of their outputs. The training is two-fold: training to acquire minimum qualification (Ph.D) to teach and continued professional training. Both types of training can be acquired either locally or overseas. Usually, local training within the nation is cheaper than overseas training but more strenuous because of inadequate facilities, literature and distractions arising from the need to meet the necessary demands. Overseas training requires a lot of foreign exchange but the enabling environment exists to achieve success in a record time. However, over time it has always been difficult to get the trainees back to their respective countries after the completion of their study.

Invariably, the salary and service benefits paid to technical education teachers in Nigeria is about the lowest in the world. This leads them to migrate to other countries especially the United States of America or local industry for better pay. Academics from within and outside Nigeria also migrate to Botswana and South Africa because of high wages that they pay to the academics and the relatively better equipped laboratories.

5) **Staff situation**: Many universities across the country are inadequately staffed both qualitatively and quantitatively. In most departments especially in technical education programme, the proportion of staff without Ph.D out numbers those with Ph.D. Uwaifo (2005) asserted that it is difficult to get people trained to the level of Ph.D because academic is not as attractive and commensurate to the effort, commitment and finances put in to acquire it; whereas a first degree graduate can function well in the industry and politics etc and earn good money.
Table 2: Shows the relative percentage of academic staff with Ph.D in technical education across the southern universities in Nigeria as at 2010.

<table>
<thead>
<tr>
<th>S/N</th>
<th>Names of university</th>
<th>Course areas</th>
<th>No. of Ph.D holders</th>
<th>Percentage %</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Building/wood work</td>
<td>Electrical/electronics</td>
<td>Metal/auto mechanic</td>
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<tr>
<td>1</td>
<td>Nnamdi Azikiwe University, Awka</td>
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<td>4</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>University of Benin, Benin City</td>
<td>5</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>University of Nigeria, Nsukka</td>
<td>6</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>University of Uyo, Akwa Ibom State</td>
<td>3</td>
<td>5</td>
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</tr>
<tr>
<td>5</td>
<td>Ambrose Ali University, Ekpoma</td>
<td>6</td>
<td>4</td>
<td>3</td>
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<tr>
<td>6</td>
<td>Delta State University, Abraka</td>
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<td>4</td>
<td>4</td>
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<tr>
<td>7</td>
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<td>5</td>
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<td>3</td>
</tr>
<tr>
<td>8</td>
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<td>5</td>
</tr>
<tr>
<td>9</td>
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<td>10</td>
<td>Rivers State University of</td>
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<td>6</td>
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<tr>
<td></td>
<td></td>
<td>Total</td>
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</table>

Author’s input

It could be seen from table 1 that no department offering technical education in Nigerian universities have adequate Ph.D lecturers, as the university with the highest Ph.D lecturers is the university of Nigeria, Nsukka; established in 1960. Of the 15 lecturers in the department, only 5 of them have their Ph.D, while others are yet to acquire it. Most lecturers in technical education department in these schools who have obtained their Ph.D, have been drained away from these schools because of the unattractive nature of the lecturing profession in Nigeria.

In order to spur locally needed science and technology activities, it is imperative that Nigeria governments should seriously consider proper retention schemes for their best talents by providing special working conditions including income supplements and adequate research supports to stem this problem of brain drain.
6) **The curriculum of technical education:** The curriculum of a subject with practical content is generally organized into an average of 67% for the theoretical classes and 33% for laboratory. Students also use the laboratory to develop case examples on their own time. Olunloyo (2002) noted that one of the issues confronting the design of appropriate curriculum for technical education is preparing students for the shift from the fordist to ICT paradigm in technology practice.

The low pace of industrialization and technological growth in Nigeria can be attributed to the widening gap between science and technology as a result of the inability of technical education to adequately utilize the scientific ideas to promote technology. This suggests the need to overhaul technical education curricula in Nigeria.

However, the overhauling of the curricula may not necessarily translate to the production of highly literate technical education experts of ready-made graduates for the industry which may result in rapid industrialization or growth in the economy of a nation unless solutions are proffered to some constraints that may militate against positive outcomes, but will adequately equip our youths with the relevant skills needed for their day to day living. The problems associated with the current curricula are:

(i) They are based on a foreign model which has evolved under ideal conditions (staff, equipment, infrastructure, training opportunities etc) that are not easily duplicated in developing countries.

(ii) There is a basic lack of textbooks in this area and most of the available textbooks are often illustrated with examples from outside the local environment and which are irrelevant to the particular country.

(iii) There is usually a shortage of highly competent indigenous teaching and support staff with sufficiently wide practical experience of technology.

(iv) The curricular are adjudged to be too academic and overloaded with intellectual content in pure science and mathematics at the expense of basic engineering and technology.

(v) Inadequate provision for humanities, social sciences, business management concepts and entrepreneurial skills development. Because of the inadequate preparation of the students for the industry some employers retrain the graduate to make them productive in their organizations.

(vi) The teaching approach follows the conventional method of transferring knowledge across through the lecturer reading out to students, who would then take down notes. The educational system continues to place considerable value on this method of teaching.

7) **The apathy of political office holders/law makers:** Education generally, including technical education programmes has been grossly neglected in Nigeria. Technical educators have the greatest challenge of convincing the law makers on why they should give priority to the programme in allocating resources. Many options of getting positive results have been advocated at different fora, namely, lobbying, participation of technical educators in governance, wooing etc. Yet the government is playing a lopsided attitude to the proper development of the programme in Nigeria. Thus, Nigeria will ever remain a technologically backward and dependent nation if this attitude and trend is not reversed.
Prospects

It is evident that Nigeria lags behind in preparing her workforce for the challenges of the rapidly changing global economy. For that, the nation must invest copiously in education with particular attention given to vocational and technical education. No nation would make any meaningful socio-economic stride without viable educational institutions. The National Board for Technical Education (NBTE) and teachers in this area should take up the campaign for more funds for vocational education and to launder its image in the society, it has been this way in many societies.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) has noted that revitalizing this sector is among the ways to improve economic opportunities for the youths. The Nigerian Labour Congress (NLC) and the affiliated unions could also help in this regard by setting up vocational training centres in local government areas from where the people could acquire some job skills. Upgrading the workers' skills would improve their productivity and advance their values (wages/salaries and benefits) and voices on the job; calling out the workers for strike actions is not the only way to fight for their welfare.

The NEEDS and SEEDS programmes should include vocational education and job training program in their economic growth and development strategies as part of poverty alleviation and assist the unemployed for job search. This is the way things are set up in many societies, and Nigeria should adopt and adapt the system if she wants to move forward. Furthermore, political rhetoric without action will not solve Nigeria's problems. The progress of Nigeria lies in the productivity of its citizens and quality education and genuine vocational programs hold the key.

Furthermore, the 1991 policy of the World Bank harped on the development of a skilled labour force which makes an important contribution to development. The challenges are to use employer, private and public training capacities effectively to train workers for jobs that use their skills and to do so efficiently in developing economies increasingly influenced by technological change and open to international competition. Training in the private sector by private employers and in private training institutions can be the most effective and efficient way to develop the skills of the workforce.

Harping on the above prospects, it is pertinent to note that government at all levels must be pressured to devote the recommended 26% of their budgets to education. Out of this we should demand that at least about 50% should be allocated to technical vocational education representing roughly 10% of the total budgets. Rather than spend tax payers' money establishing General studies universities in all the local government areas, and claiming that as an achievement the existing ones should be well funded so that both staff and students will be motivated to make their contributions to the development of the country.

Furthermore, one of the greatest problems of our education is that every government wants to give an impression that it is doing something. Thus policies that are not well thought out are introduced and changed arbitrarily and whimsically. There should be an end to policy somersaults. We should build an architecture of technical schools with the universities of technology at the apex. Those who choose the technical career path should be able to proceed from the senior secondary schools to doctorate degrees without feeling inferior in the least to graduates of the general studies institutions.

Technicians and all who pass through our technical-oriented schools ought to be adequately and equitably remunerated. The dichotomy in the civil service between holders of 'General Studies' certificates and technical certificates must not only be abolished as a matter of policy but in the thinking and attitude of government officials. The truth of the matter is that technicians or
technologists are not inferior to their counterparts. It is a matter of career choice and we should make this very clear to our children right from the primary schools.

Conclusion

Jimn gang (2004) posited that there is need for a total overhauling of the educational system and that in many fields, course work available only lead to rising unemployment, poverty and misery. He concluded that the situation could only be curbed if syllabuses were innovated, re-engineered or re-designed to include disciplines that build up the fighter – spirit needed for today’s intellectual battles of life. For progress to be made in Nigeria the challenges confronting technical education must be recognized and fought vigorously. Adequate resources should be allocated to the programmes in order to achieve positive outcomes. A comprehensive reform towards technical and vocational education and a deliberate attempt to uplift the programme is the only panacea to a technological enderado in this country.

References

Gender/ Women in Science and Technology in Bayelsa State: 
Its Goals and Challenges for the New Millennium Development

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Abstract
The gender dimension of science and technology (S&T) has become an increasingly important and topical issue worldwide. For over thirty years now, the United Nation General Assembly and the UN Economy and Social Commission have emphasized the inequalities and disparities in the educational opportunities open to women and girls, and in women access to training and the labour market (Ligia, 2007; Walter, 2007). In Bayelsa state many women and girls are excluded from participation in science and technology (S&T) activities by poverty and lack of education (at all levels), and by aspects of their legal, Institutional, political and Cultural environments. On primary education the state achieves gender parity. However gender parity decreases in secondary education and the gap widens even more in tertiary education. The situation of educational system in the past sixteen years whereby women and girls were directed to the farm to do farm work while the men and boys were given the opportunity to go to school even though they were not fully committed. Presently this state has achieved overall progress in gender equality and female empowerment according to the latest 2007 data due to continuous establishment of schools from primary to tertiary levels of which Niger Delta University is one. This institution offers many courses in science and technology and has produced a lot of female graduates both in pure and applied sciences such as pharmacy, medicine, engineering etc. Women face a lot of challenges in Science and Technology career for their work are underrated and are less considered for any grants in Bayelsa state even in Nigeria at large. If this erroneous attitude is checked and our women are given equal opportunities like their male counterparts, this will help increase the pool of women in this field.

Keywords: Gender parity, Science and Technology, Women, Education, Economy

Introduction
In the commonwealth of Independent states (CIS) women’s participation in research is significantly higher (43 percent) than the world average (European Commission, 2004). In Africa, it is estimated that about 31 percent of researchers are women. In almost one- half of countries with available data, however, women represent less than 30 percent of researchers. As we enter the twenty- first century, the pace of technological advances continues to accelerate, with great potential to improve the lives and livelihoods in developing and developed countries, and with profound implications for the global economy (L'oreal UNESCO Awards for Women in Science, 2007 ). Despite some global trends, only part of the world’s population has benefited from Scientific and Technological advances and the resulting improvements in quality of life and life expectancy. Over 1 billion people are living in poverty, and most of them are women and children. Worldwide, 1 billion people have no access to safe water; 2.7 billion do not have access to adequate sanitation and over 800 million remain chronically undernourished (WWAP, 2006; UNDP, 2004). This paper is thus undertaken to evaluate the role of women in science and technology, its challenges and the way of improving these to actualize the ultimate goal of full participation of women in this field.
Role of Science and Technology (S&T) in improving sustainable and equitable development

The role of science and technology (S&T) in promoting sustainable and equitable development has not yet been fully recognized, but already there is consensus that S&T is critical to any strategy to improve quality of life and the socio-economy and environmental situation of any country. Poverty and hunger can have political, social, cultural, environmental and economy roots. Science and Technology (S&T) can help to meet some of these challenges and reduce poverty by promoting economy development, creating job opportunities and increasing agricultural and industrial productivity. S&T can provide clean and renewable energy sources, and can help to improve health and education and predict and manage the effects of climate change and biodiversity. Science, technology and innovation also have the potential to improve nutrition, increase crop yields, provide clean water and improve soil management, and can lead to the development of vaccines and cures for diseases (UNIFEM, 2000).

Role of Women in Science and Technology (S&T)

In many countries, women have unrecognized and invaluable traditional and local knowledge and are major producers of commodities, merchandise, food, energy and water. Using scientific and technological knowledge in a way that complements and refines such traditional and indigenous knowledge can increase productivity levels and improve monitoring and managing of our ecosystems. Yet imbalances in how science and technology is applied for social development often disadvantage women in particular (UNIFEM, 2000; Blackden and Banu, 1999). In a great number of communities around this study state, even around the world, women play a vital role in the incubation transfer of critical local knowledge on which survival strategies are based (ITDG, 2000; Appleton et al., 1995) Not only can modern science validate this local or traditional knowledge and the skills arising from women’s role- food production, energy provision, traditional healing practices and the management of natural resources- but technology has considerable potential to reduce the labour of such work and increase the marketable skills and productivity of women working in these areas; thereby adding value to their economic activities (Juma and Lee, 2005; Huyer, 2004). Science and Technology can be important tools to empower women.

The complex interrelationships between women and technology may be illustrated by looking at three vital areas; food security, water and sanitation, and energy.

Food Security

In Bayelsa state women are responsible for up to 80 percent of food production- through subsistence farming, food processing and marketing – yet they are too frequently overlooked when it comes to providing technology and other resources to support agricultural development. As a result, women’s food production activities have been marginalized (Muntemba and Chimedza, 1995; Stamp, 1989). In some communities in this state virtually all unpaid work carried out by women is agriculture-based. Other important and less-studied components of women’s agricultural activities include livestock management and the preparation and sale of street foods (Lee-Smith, 2004; Tinker, 1997; Maeda-Muchango, 2003). Economic development and the development of sustainable livelihood are closely linked to food security (Muntemba and Chimedza, 1995). Food supplies can be dramatically reduced by natural disaster such as droughts or flooding or human-caused crises such as war. Severe ecological degradation can quickly diminish land productivity, and policy choices concerning which crops are grown and where (and who profits from them) can have
an immediate impact on primary producers. With adequate economic resources, including increased mobility and access to credit and markets, food crises can be ameliorated and families helped to raise their income to a sufficient level for basic livelihood.

**Water and Sanitation**

In many countries women and men have different roles and responsibilities in the use and management of water. Women and girls are frequently responsible for collecting water for cooking, cleaning, health and hygiene and if they have access to land, food cultivation. Lack of convenient access to clean water resources costs women countless hours in fetching water, and adds the burden of caring for those ill from polluted supplies. In many rural areas of developing countries, women and girls can spend four to five hours per day carrying heavy containers and waiting in lines, a burden that inhibits their involvement in education (Khosla and Pearl, 2003). In many communities, women have to work long distances to use toilet facilities, and about one in ten school age African girls does not attend school during menstruation or drops out at puberty because she has no access to clean, and private sanitation facilities at school (Khosla and Pearl, 2003). Other water issues include pollution, environmental degradation, and the contamination of groundwater and aquifers. Though women often determine water usage, they are rarely involved in making vital decisions relating to sanitation and hygiene (such as decisions over the availability and placement of toilets). Hence clean drinkable water is increasingly in short supply. Eighty percent of all sickness in the world is attributable to unsafe water and sanitation. Water-borne diseases kill 3-4 million people, mostly children, annually, and millions more are sickened with diarrhea, malaria, schistosomiasis, arsenic poisoning, trachoma and hepatitis- diseases that are preventable by access to clean water and healthcare information (UNWWAP, 2006; Khosla and Pearl, 2003; UN, 2002).

**Energy**

Biomass- plant matter grown for use a solid, liquid or gas fuel- is the main energy source of a great number of the world’s rural households. Biomass is grown from several plants, including switchgrass, hemp, corn, poplar, willow and sugarcane. In poorer countries like some communities in Bayelsa state, however, it is often of low quality, producing smokes and particulates that are damaging to human health. Through long hours of exposure to smoke and particulates in kitchens, women in developing countries experience higher levels of lung and eyes diseases than men. As Joy Clancy, Margaret Skutsch and Simon Batchelor point out in The Gender- Energy- Poverty Nexus (2003) women and girls in rural areas also tend to be responsible for gathering biomass (commonly for several hours each day), with further health repercussions, and girls are frequently kept away from school for this task. There are a variety of aspects to gendered perspectives on energy use, households in urban areas have to buy their cooking fuel, which can cost up to 20 percent of their income. Although women are generally responsible for house- hold energy provision and use-particularly through cooking, cleaning and fuel collection- when energy is purchased, men often make the decision. Studies have found that men tend to see the benefits of electricity in terms of leisure activities, improving quality of life and educating children, while women think in terms of reducing their workload and expenditures, and improving health (Clancy et al., 2003).

By upgrading energy sources, agricultural and handicraft technologies, water and sanitation, many technologies have the potential to improve lives, especially those of women. Recognizing gendered patterns of behavior and improving opportunities to benefit from science and technology for social development can have an impact not only on women, families and communities, but on a
country’s socioeconomic development as a whole (ECOSOC, 2004; UNCSTD, 1995). Women are very often active agents of change in the use and application of energy, both in their roles as producers and users of energy and in their economic activities and involvement in community organization.

**Challenges faced by women to fully participate in Science and Technology (S&T) or Factors that contribute to low number of women in S&T**

Andresse St Rose, a research associate at the American Association of University Women has done research on challenges that girls and women face in studying and working in Science, Technology, engineering and math field (STEM). She says the gender gap begins at a very early age. Both boys and girls have similar interest in Stem, but the advise the girls receive from the society affects their interest negatively, even though girls score higher marks than their male counterparts in Stem in secondary schools, as they head off to University, the number of women in Stem classes drops.

The environment in college Stem classrooms is often a deterrent to women. Stereotypes abound and they don’t feel welcome. Women also feel isolated particularly in fields like engineering, where they may be only one of two women in the room. A wide range of factors may explain the lower number of women in senior Research and Development positions, including work-life balance, gendered patterns and approaches to productivity, and performance measurement and promotion criteria. An increasing body of research examining the nature of the scientific endeavour from the perspective of race, class and gender reveals the pitfalls of an academic career system that is based on a traditional male model of labour market participation. This includes long working hours, limited allowance for personal life and responsibilities, emphasis on early achievements and exclusive identification with science and the workplace. Scholarly review processes rarely take into account gendered patterns of productivity and careers, domestic and child-bearing responsibilities, or publication patterns. Many countries including Nigeria are already working to substantially increase the participation of women in research and development. But although sex discrimination does play a role in women’s lower participation in science, in general the problem is larger, having to do with how the system is constructed. It tends to be those who fit the traditional male model set by those already in powerful positions who are assessed as better scientists (European Commission, 2004). For example, in the United States, having children significantly reduces the chances of promotions for women, but not for men (Olson, 1999).

One of the prime factors restricting women’s participation in the scientific endeavour is that existing systems of defining and evaluating scientific excellence are not as gender neutral as they are claimed to be. Bias occurs in the definition of scientific excellence and assessment criteria, choice of explicit and implicit indicators to measure excellence, differing application of measurement criteria to men and women, and the failure to integrate women in scientific networks and assessment frameworks. The key question posed here is the following: Are women’s and men’s achievements assessed on the same basis and from the same level of opportunity and inclusion? (European Commission, 2005). A number of researchers have emphasized the biased nature of science pointing out that it is a human activity heavily influenced by prevailing social, political and economic factors (Rosser, 1988). Related questions concern how other social and life situations—such as race, geography, disability, socioeconomic status, age, marital status and sexual orientation—affect not only the practice of science, but perceptions of scientific merit (Harding, 1993; Malcom, 2006). For women, current measurements of performance and productivity work to their disadvantage. A United State National Science Foundation (NSF) review of gendered career patterns found that women faculty earn less than their male colleagues; they are promoted less frequently, and they publish less frequently. These results emerged even when studies are controlled for factors
such as age/, experience, academic rank and family characteristics. As a result, women participate less in senior societies, committees and prestigious activities (NSF, 2003).

“Count-based” and publication-focused measurements of employment experience and publication record also tend to penalize women by not properly reflecting the quality of their contributions. Many studies show that women prefer to focus on teaching and interaction with students (NSF, 2003). Studies on citation rates and patterns have revealed interesting (and often gender-based) trends. While straight index counts generally indicate lower production by women, use of a quality-weighted index that takes into account the number of times an article is cited will demonstrate a higher level of scholarly production by women. A study by Sonnert and Holton (1995) of 699 scientists in the United States found that women tended to produce work that was more comprehensive and succinct, so that while they have fewer number of publications, these publication tended to be more widely cited. In biochemistry, J. Scott Long (1992) found that the average paper by a woman was cited 1.5 times more often than that of a man, because women tend to be more cautious, thorough and attentive to detail in preparing work for publication. This is partly due to a sense of example insecurity about the quality of their work, as well as a sense (often based in reality) that their work is not rated as highly as that of their male colleagues. Women achievement are frequently underrated example Rosalind Franklin and Jocelyn Bell who received no formal credit for their part in Nobel Price-winning scientific work (Handelsman et al., 2004; Symonds et al., 2006). The result is that women’s work often has to be seamless to be valued as its worth (Schiebinger, 1999; Rathgeber, 2002; Margolis and Fisher, 2002).

Although women are as likely as men to collaborate on research projects, and co-author less than men, this is a disadvantage in ranking because single and co-author publications are weighted equally (Sonnert and Holton, 1995). Since both women and men tend to collaborate with researchers of the same sex, the lower number of women in S&T fields restricts women’s opportunities for collaboration (NSF, 2003). Other indicators that give clues about the achievements of women in scientific career could be funding success rates by gender or the proportion of women on scientific boards. The European Commission’s WiS database shows that in most EU countries men have higher success rates, even in Nigeria, in obtaining research funding than women, though not statistically significant. Women are under-represented on scientific boards in most countries, due to their low proportion on scientific boards which is a reflection of their participation in the process of setting the scientific agenda.

Studies of grant awards indicate that structural and social inequalities exist in the award evaluation and selection process. One study found that male applicants to Sweden’s Medical Research Council (MRC) and researchers with an affiliation with one of the evaluators were more successful (Wennner and Wold, 1997). Competence was one factor in the final decision, but women had to demonstrate much higher credentials than men to obtain the same grants. Many science awards favour men over women due to gender disparity (Carnes et al., 2005; Malcom, 2006). A recent experiment shows prevalent double standards: curriculum vitae were ranked more highly by both male and female assessors when assigned male names (Steinpreis et al., 1999). In another study both men and women were given a research article by an author identified variously as John T. Mckay, Joan T. mckay, J.t. Mckay (sex-neutral), Chris T. Mckay (ambiguous with respect to sex) and Anonymous. When identified as written by a male author- John- the article received the highest reviews; next in ranking was the article identified as written by J. T, and third was Joan. When readers thought the initials J. T. indicated a woman trying to hide her identity, the article was ranked lower (Paludi and Bauer, 1983).
Factors that can improve Women’s participation in Science and Technology.

The government should increase women and girls’ access to education and careers in S&T increases the likelihood that women will join men as full participants in Research and Development activities. Each department of Science and Technology in Nigerian Universities and other higher institutions of technological learning should have the main objectives to assist the National Advisory Council on Innovation (NACI) to promote a research agenda, including influencing funding that will improve women’s quality of learning. The government should assist NACI to promote innovation that will allow women to make a greater contribution to wealth generation in Bayelsa State, Nigeria. Provide advise on developing mechanisms that will increase the participation and contribution of women in Science and Technology.

Highlight role models that promote women’s entry and advancement in S&T Monitor the institutional impact of these actions

St Rose says active recruitment of women by college Science technology engineering and mathematics (Stem) departments would help. Young women also need to be exposed to possible Stem career paths to increase their interests. In many cases Stem departments don’t actively recruit students, they want to see who shows up on their doorsteps. But we need to see more active outreach for women. Also women chose the field that is personally fulfilling, and they are advised to go into traditionally female occupations such as social work or teaching, but a lot of Stem fields such as engineering and biomedical research are also helpful to society hence they should be advised to do them. Universities should also become more mindful about the life choices of juggling the demands of work and family that all young people-women face, positive role model are crucial.

Women leadership roles in the Stem industry is important, because they will become role models and mentors for the next generation. Hence, women after studying and get a Stem degree should practice in S&T industries. This will help increase the pool of women overall.

The equality approach argues for gender parity on the basis that women should have equal opportunity to contribute to and benefit from Science and Technology (an argument that can in itself be considered a sufficient basis for reforming the science system) (Schiebinger, 1999). Women scientists continue to be absent in top managerial positions from educational and research institutions and also the ministerial level. Inevitably, this excludes female voices from being heard and in equal partnership- in decisive decisions on the current and future orientation of Science and Technology (Rathgeber, 2002; Campion and Shrum, 2004). These vices should discouraged in the professional forum. Undoubtedly, varied experience is important, and effort must be made to develop women’s skill through opportunities that fit their circumstances, such as a programme of short visits instead of a longer posting or assignment to international teams in their home country. Equal pay for equal work is widely agreed to be a basic human right.

Conclusion

In view of aforementioned roles, challenges and improvements of women full participation in Science and Technology, it can be stated that the potential of S&T to contribute to national socioeconomic development cannot be realized without making the best use of all sectors of a nation’s population. Knowledge is at the centre of a strong, dynamic and evolving innovation system, which depends upon the input and contribution of all stakeholders, in all sectors of Science and Technology. Although women and girls in many countries are enrolling in and succeeding at the full range of Science courses at all educational levels (and in some countries the participation of
women in the life sciences is at least equal to that of men), a great number of the world’s women still face socio-cultural economic and religious barriers to full participation in Science and Technology. If all these biased attitudes against women in S&T are abrogated and the improving factors listed above are put into consideration, adopted and applied, Bayelsa state would be a state to be proud of in terms of advanced socioeconomic involvement in Nigeria through Science and Technology skills, thereby boost the morale of this great nation Nigeria, not only in Africa but in the world at large.

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Community Development as the Bastion of Sustainable Development in Nigeria

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Abstract
The oft quoted slogan of sustainable development, it has been argued; cannot become achievable without a conscientious effort at ensuring an integrated and practical approach towards that goal from the grass root level. The grass roots is the countryside where it has been argued that most of those who eagerly respond to activities and schemes for primary industrialization are found; and from where the workforce and resources for heavy industries and operations come from. The locality participation model of the community development theory expounds the methods and processes of articulating the consciousness of the need for development among the citizenry at the community level, so that when this is achieved, the collectivity of such efforts in developmental programme by the various communities would form a solid foundation for all round national development. This paper submits that this approach if used to mobilise the people will achieve sustainable development.

Keywords: community, development, initiative, needs, and self-help.

Introduction
Community development is everyone's responsibility. It can be further stated that community development is a responsibility which begins from the bottom (that is, the grassroots and not from the top (which is the government). It can therefore be said that for effective community development to be achieved, the local inhabitants must know what it is all about, what it entails, and what it will result to. Akanimo (2000) holds the view that before community development will be achieved; there must be mass mobilization of the local populace to the consciousness of the need for development and how that development can be achieved. Essentially, community development has long been identified as a sine qua non for the general development of the larger society and the country in general. Ewa (1978) submits that it is this need for community development that gave rise to the balkanization of the country into smaller units right from the colonial era, starting from Sir Authur Richards. In this views, Sir Arthur Richards as the Governor of Nigeria had argued that dividing the country into units with the mandate and responsibility for the development of the smaller units vested in the people of such units will hasten the development of such regions, hence he went ahead and divided the country into three regions of North, East and West in 1946, with the explanation that the exercise is to allow each regions and their people to develop at their own pace (Orjiako 1981). Since then the balkanization exercise has been continuously and consistently carried out at both the national level and at the level of the local units themselves. This exercise resulted in Nigeria growing from three regions in 1946 to become four in 1963; and 12 in 1967; 19 in 1976; 21 in 1985; 30 in 1991 and 36 in 1995.
Conceptual Definition of Terms

Some terms in this work need special attention at explanation so that the intention and direction of using them will become clearer. These include:

1. Community

Sociologically, community is defined as a group of people who live in a geographically defined territory and share common socio-cultural attributes with similar socio-cultural institutions-political, economic, cultural and social. These may be common businesses, common methods of education, common world-view, common religious beliefs and practices etc. from the foregoing definition there are different types of communities depending on the size, origin, make-up and activities of each communities. To this end, two major types of communities are easily identifiable. These are (1) Traditional (primary) community, and (2) Secondary (Adopted) community. A traditional community (Gemeinschaft) is one which is usually small and the inhabitants can easily trace their origin to a common ancestor or community. The people of traditional communities are usually emotional and sentimental, which may be as a result of their common origin with everyone looking and perceiving one another as brothers and sisters, no matter the size of their community. Such communities usually have a common world view with common aspirations. The people from such communities are relatively equal in terms of achievements and progress in life. Secondary or adopted communities (Gesselschaft) are usually communities with people of diverse background-different ancestors, different cultures, different world view etc. the people are usually outgoing, less sensitive and less emotional. They aspire differently and engage in what fancies anyone’s attention. They are very progressive and achievement minded. This type of community is usually associated with urban areas or large areas where it is usually difficult to establish the identity of those who make up; live and work in such communities. There is no common culture in such secondary communities.

Both types of traditional and adopted communities can be either open or closed. According to Obikeze (2006), an open community or society is one in which the inhabitants are free in all the ramifications of freedom-freedom of movement to wherever they desire to go; freedom to engage in whatever activity they choose; freedom to live their lives the way they choose. Closed societies or communities are the ones in which the opposite of the life in open societies obtain. The people have their lives, regulated by the government or other overseeing agencies. In some cases, the people choice of work to do, their lifestyle and their world-view is dictated by the government as was the case in the former communist bloc of the defunct Soviet Union and their allies. By the reason of folklore, and in some cases, actual history, most communities in Nigeria belong to the primary or traditional type. (Aliyu 1982).

2. Development

Desai (2008) submits that development is a generic term. This means that it has many uses and variants; which variety is clarified in the context of the definition of the usage. For the purpose of this work; development is defined as a permanent condition of positive growth, resulting in a higher level or condition, which is better than the previous stage or position. (Iheanacho 2000). In the views of Long John (1998), development is induced. It has to be worked to be attained. This is more apt for community development which is desired for the transformation of such places to become better and more conducive and more hospitable than they previously were. As a desired stage, the
attainment of any stage in community development has to be planned, programmed, and the process towards development implemented, evaluated, reviewed and ascertained.

3. Needs

Obikeze defines need as “the pressing problems which are important to be addressed in order to achieve development”. Community, development is about addressing identified needs of any community in order to transform them. Obikeze identifies the most pressing of the problems of a community as “felt needs” that is, the needs which the community feels most. The first step towards the attainment of development is to identify their “felt needs”; analyze them and map out strategies for addressing them; formulate the policies for such strategies, and implement such policies effectively. Awa (1986) explains that felt needs can be classified as;

1. Demonstrated felt needs that is, where the communities have proceeded with action to demonstrate their commitment to grapple with their most pressing need.
2. Solicited felt need: This type of need is one developed out of desire to be like others e.g. if the Government builds a hospital in a community, and another community Solicits for such a hospital to be built for it.
3. Ascertained needs: This is determined out of consultation and interaction with the people by the government or its officials.
4. Generated felt need: This defines need established through the mobilization of the people to sensitize them towards a particular need which exists but which their consciousness or awareness does not establish as a felt need.

4. Self help

According to Elekwa (1999), this is a programme of action actuated into a project proposal to be executed by the people themselves for their community; or with assistance that comes through the government or other developmental agencies during the conventionalization or during the implementation of such projects. Self help projects are evidence of effective and successful mobilization of the people which goes beyond creating awareness in the people to energizing them into action. Self help projects are resorted to as a result of the insensitivity of the government to the plight and need of the people or as a result of non or inadequate representation at the level of decision making in governance; compelling the people to take their own developmental destiny into their own hands.

5. Initiative

Initiative general means volition, resolution, expression of commitment, or pursuit. In this study, initiative goes beyond this general assertion to mean a determination and procedural engagement with a cause. Ejiofor (1978) says that it means:

i. all the processes and decisions involved in conceptualizing community development,
ii. deciding on the activities to bring about the desired developmental goal,
iii. formulating workable and achievable policies;
iv. commitment to pursuing the implementation of such blueprints relentlessly until the achievement of set goals;
v. evaluating the process followed;
vi. fashioning out a permanent action guideline for repetition of the execution of similar or other developmental projects;

vii. outlining a maintenance scheme that will transform into a culture for the upkeep and retention of achieved developmental milestones.

Okafor (2008) submits that this developmental initiative makes developmental endeavours to become a culture among a people or a community. It becomes eventually an annual engagement during which either a developmental stock-taking is made, or developmental landmarks are reviewed, renewed, or new ones are initiated and carried out; this being the case with the August-break meeting syndrome among the communities of the Ibo nation.

Theoretical Framework

This work is predicated on the Principle of co-operation model of the locality participation theory of community development. Etuwor (1995) explains that the locality participation theory of community development has many variants namely:

1. Principle of co-operation model
2. Historio-cultural model
3. Social awareness model and

He says that the principle of co-operation model works through the dictum of “unity is strength” as the slogan to engender the spirit of co-operation among the people to unite for the developmental needs of their communities to be met. He concludes that the rallying call and basis of the success of this approach is co-operation for development which compels the people to look beyond every distraction or divisive tendencies and focus on the developmental objective decided upon.

Historio-cultural model, according to Etuwor is the community developmental approach which relies on the found memories of the developmental zeal of the people’s pasts; and the cultural characteristics of “need to develop” inherent in some groups psyche, whose tendency is always to engage in one developmental agenda or the other. Examples of this approach in some areas where markets, roads, health centres, schools, churches of various designs and magnitude constructed on the past ages litter the landscape; and the present generation engage in more grandiose and gigantic projects such as the building of secondary school, construction of bridges, and other more expansive and expensive projects.

Social awareness model explains community development embarked upon as a result of the awareness and realization of the need for such developmental engagement by the people of such communities. Such awareness may come as a result of witnessing and observing what is going on in the communities or the realization of the need for such projects. Examples include the need to embark upon building a postal agency or post office upon realizing the importance of the dearth of medium of external communication by the community with the outside world; or the building of a market to attract outsiders to the economy of a community.

Mass mobilization model refers to a situation where community development is engendered through the propaganda, motivation, compulsion of the government or other developmental agencies. Such mobilization can be carried out through developmental campaigns, advertisements, visit of mobilization officers, radio and television jingles, television and radio discussions, promotions and directives (Ogbuagu 1999).

In all of these, the principle of co-operation model appears to be the most preferable model, hence it is recommended here. The reason for the recommendation includes:
1. It is a learning process which promotes co-operation and unity that ensures peace that cannot easily be forgotten but can be, and is easily transferred from generation to generation.

2. As a learning process, it is scientific and can be repeated and replicated from community to community promoting the inter-community co-operation of the operators.

3. It is cost effective because as a joint effect it eliminates unnecessary and extraneous expenses and the estimate is determinable and the cost predictable.

4. Its cost-benefit-analysis is positive because it involves felt need project chosen by all and which must be a necessity to the community and the benefit cannot be over-emphasized.

5. It is recommended for peace education.

Akwe (2008) is of the view that policies and programmes which involve the co-operation of all state holders in a particular community and which extends to other communities, are vehicles for inter-community integration which can bring about the needed stability that would create a conducive environment for good governance and afford the government to save the resources which would have been spent on security matters, and divert them into beneficial developmental goals.

Community development can only be achieved through the co-operation and involvement of all and sundry, especially by all those who have a stake in the community whether within it or outside of it. It therefore becomes necessary to take measures for explain developmental proposals to the proper understanding of all in such a manner that everyone knows their roles and express their willingness and ability to fulfill those roles and play their parts so that the developmental objectives will be achieved to the attraction and interest of others in other communities. Such other communities would be attracted in such a way that they will commission their own projects such that their own projects would complement the projects in the other communities. In this way, integrated community development would have been achieved in a way that a network of inter-community dependence and relationship would be established thus promoting peaceful co-existence, unity and co-operation.

Conclusion

Community development is evidently an instrument of peace, unity and co-operation, and a platform for building solidity part and legitimacy for the government. The principle of co-operation model of the locality participation theory of community development makes community development an enterprise that would highlight and priorities development projects from community to community in a manner that would ensure the effective integration of the communities and create a network of mutual dependence, advantageous benefits and peace; bringing about stability that would promote good governance and the conducive environment for greater dividends of bigger and higher development projects to such communities by the government.

Recommendations

1. The issue of community development should be taken more serious by the government and her official as well as the agencies and organizations engaged in development issues.

2. Grants, aids, support, logistics should be used as incentives to attract communities to engage in development projects.

3. Trained personal and officials should train and equip local people for community development in the communities.
4. Government should commend communities by augmenting their developmental efforts with more projects that would attract other communities to engage in development in order to get their own projects from the government.

5. Community development should be made courses of study in post-primary and tertiary institutions and such programme adequately funded and professionalized.

6. Prizes, certificates, awards should be given to outstanding communities and such projects taken over by the government for running and management.

References

The Influence of Principals’ Leadership Styles on Secondary School Teachers’ Job Satisfaction

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Abstract

This study was designed to investigate the influence of Principals’ leadership styles on secondary school teachers’ job satisfaction in Nsukka Education Zone of Enugu State, Nigeria. The design of the study was a descriptive survey design. By application of stratified random sampling technique, a total of 28 public secondary schools were drawn from three Local Government Areas in the zone. Some 280 classroom teachers (10 from each school) were used as respondents for the study. In an attempt to focus the study, three research questions were posed and one null hypothesis was formulated and tested. The instrument for the study was a four-point Likert type questionnaire. Answers to the research questions were analyzed using mean and standard deviation while t-test was used to verify the null hypothesis at 0.05 level of significance. The results revealed that the principals adopted three leadership styles in their administration namely; autocratic laissez faire and democratic according to their dominance. Teachers irrespective of gender agreed that only democratic leadership enhances their job satisfaction. Recommendations include promotion of in-service training on the application of appropriate leadership styles for principals while teachers should be allowed to participate in decision making.

Keywords: Leadership styles, job satisfaction, principals, teachers, secondary schools.

Introduction

The principle factor for onset, smooth running and achievement in any organization is effective and realistic administration. Administration according to Hornby (2002) is perceived as activity done in order to plan, organize and successfully run a business, school or other institution, a process or act of organizing the way that something is done. Administration according to Edem (2006) involves planning activities which aim at the fulfillment of the goals of a particular organization. It calls for the ability of the administrator to make the right decisions to fulfil the required goals. In educational setting therefore, administration has been extended as a service activity or tool through which the fundamental objectives of the educational process may be more fully and efficiently realized. Its essence is the enhancement of teaching and learning processes.

Leadership is the key to the progress and survival of any organization whether it is an enterprise or institution. It is of inestimable importance in educational administration because of its far reaching effects on the accomplishment of school programmes, objectives and attainment of educational goals. Consequently, Ezeuwa (2005) sees it as the act of influencing people so that they strive willingly and enthusiastically towards the accomplishment of goals. In the same vane, Ukeje (1999) observes that leadership means influencing people to work willingly with zeal towards the achievement of the corporate goals. A leader cannot work alone; he must have people to influence, direct, carry along, sensitize and mobilize towards the achievement of the corporate goal.
Principals of secondary schools constitute dynamic leaders who influence classroom teachers who are their immediate subordinates in the school management system. Okafor (1991) noted that in Nigeria most of the successes or failures in secondary school administration or other institutions depend largely on the influence of these leaders on their subordinates.

Popoola (1984) defined job satisfaction as the totality of employees' social and psychological well-being relative to job performance. It culminates in satisfactory interpersonal relations, financial rewards, fringe benefits, training and promotion, decision-making and free channels of communication among others. This predisposes employees to hard work and optimum productivity.

Basically, such achievements in secondary schools are dependent on three identifiable leadership styles namely; autocratic, democratic and laissez-faire leadership styles (Lunenberg & Ornstein, 1991). While the autocratic leadership style appears generally self-centered and allows minimum participation of the subordinates in decision making, the democratic style is rather people oriented and counts on the participatory contribution of the subordinates (Mgbodile, 2004). It permits initiatives, originality and creativity in school work operations and promotes hard work among the subordinates.

On the other hand, laissez-faire leadership style refers to the type which allows free contributions of ideas or opinions without interference by the leader. In this case, subordinates develop and maintain individual standards of performance, and correct themselves from their mistakes as need arises. Obi (2003) argues that such style predisposes to unproductive activities very often and could be detrimental to school welfare. On the whole, school principals are therefore assessed by their subordinates for credible performance based on application of these leadership styles.

A major concern of all modern organizations is goal attainment. There is therefore informed growing interest to determine which of these styles is capable of ensuring organizational goal's attainment and personnel job satisfaction. In Nigeria, particularly Nsukka education zone, teachers appear to be less satisfied with their jobs as is evidenced by occasional truancy, indiscipline, examination malpractice and drifting away from teaching profession (Onwurah, 1999). It has become necessary that relationship between leadership styles applied by principals on one hand and job satisfaction of secondary school teachers on the other hand be investigated.

Purpose of Study

The main purpose of the study was to investigate the principals' leadership styles and determine how they influence teachers' job satisfaction in secondary schools in Nsukka Education Zone. Specifically, the study aimed at finding out;

1) The leadership styles commonly adopted by principals in Nsukka Education Zone.
2) The influence of the leadership styles of principals on teachers' job satisfaction.
3) The extent to which the influence of leadership styles of principals on teachers' job satisfaction is gender dependent.

Research Questions

The following research questions guided the study;

1) What are the leadership styles commonly adopted by Secondary School Principals of Nsukka Education Zone?
2) How do the principals' leadership styles influence teachers' job satisfaction?
3) To what extent is the influence of leadership styles of principals on teachers’ job satisfaction gender dependent?

**Hypothesis**

The following null hypothesis was tested at P < 0.05 level of significance.

H01: There is no significant difference in the mean ratings of male and female teachers on the influence of principals’ leadership styles on their job satisfaction.

**Research Method**

The research was a descriptive survey aimed at investigating the influence of principals’ leadership styles on classroom teachers’ job satisfaction in Nigeria with emphasis on Nsukka Education Zone. The zone comprised Nsukka, Igbo-Etiti and Uzo-Uwani Local Government Areas. By application of stratified random sampling technique, 12, 8 and 8 secondary schools were respectively drawn from each of these Local Government Areas and used for the study. These numbers were based on the population of secondary schools in each Local Government Area. Some 120, 80 and 80 classroom teachers (10 per school) were drawn from each of the Local Government Areas respectively. Thus, 280 classroom teachers constituted the respondents for the study.

The instrument used for the study was a questionnaire developed through extensive literature and based on three research questions. It was divided into three sections; A, B & C. Section A of the instrument sought information on the personal data of the respondents. Section B contained 15 descriptive statements designed to elicit responses about the leadership styles adopted by the secondary school principals, while Section C considered other fifteen items concerned with ways in which leadership styles of principals influence teachers’ job satisfaction. The responses were placed on a 4-point rating scale of A Strongly Agree (SA), B Agree (A), C Disagree (D) and D Strongly Disagree (SD) and were rated 4, 3, 2 and 1 respectively. An estimate of internal consistency using Cronbach Alpha formula was chosen because the items were in cluster form. An overall internal consistency index of 0.54 was obtained. This coefficient showed that the instrument was internally consistent.

The instrument was face validated by three experts, two from Educational Administration and Planning, and one from Measurement and Evaluation in the Department of Educational Foundations, University of Nigeria, Nsukka. Validation points were to assess the structuring of the instrument, verification of the adequacy of those instruments and the weighting of responses expected from the respondents. Services of some Research Assistants were employed in collecting all the data.

**Data Analysis Technique**

Data collected were analyzed using mean values and standard deviation. The t-test statistic was used in testing the null hypothesis formulated for the study with 28 as degree of freedom (df).

**Results**

The results are presented in Tables 1-4 according to research questions and hypothesis that guided the study.
Research Question One

What are the leadership styles commonly adopted by secondary school principals in Nigeria particularly in Nsukka Education Zone?

Data collected with items 1-15 of the instrument, which dwelt on leadership styles adopted by secondary school principals were used to answer this research question. Data were analyzed using mean and standard deviation. Summary of the results is presented in Table 1

Table 1: Mean and standard deviation scores of the leadership styles adopted by secondary school principals. in Nsukka education zone

<table>
<thead>
<tr>
<th>S/NO</th>
<th>LEADERSHIP STYLE</th>
<th>SD</th>
<th>DECISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Laissez-faire</td>
<td>2.99</td>
<td>0.97 A</td>
</tr>
<tr>
<td>2.</td>
<td>Autocratic</td>
<td>3.14</td>
<td>0.93 A</td>
</tr>
<tr>
<td>3.</td>
<td>Democratic</td>
<td>2.53</td>
<td>1.25 A</td>
</tr>
</tbody>
</table>

Table 1 above showed that the three leadership styles listed in the study were adopted by secondary school principals. The highest rating was assigned to Autocratic leadership style (\( \bar{X} = 3.14 \)) followed by Laissez-faire (\( \bar{X} = 2.99 \)) and lastly Democratic leadership style (\( \bar{X} = 2.53 \)).

Research Question Two

How do the Principals’ Leadership Styles Influence Teachers’ job satisfaction?

Data collected with items 16-30 of the instrument, which dwelt on influence of leadership styles of principals on teachers’ job satisfaction were used to answer this research question. Summary of the results is presented in tables 2a, 2b and 2c with respect to the three leadership styles listed in the study.

Table 2a: Mean Ratings of the Influence of the Autocratic Leadership style of Principals on Teachers’ Job Satisfaction.

<table>
<thead>
<tr>
<th>S/NO</th>
<th>ITEM DESCRIPTION</th>
<th>( \bar{X} )</th>
<th>SD</th>
<th>DECISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>The Principals’ attitude of not considering teachers’ suggestions and ideas in decision making makes teachers to lose interest in their job</td>
<td>2.83</td>
<td>1.091</td>
<td>A</td>
</tr>
<tr>
<td>17</td>
<td>The use of threat and punishment to get the objectives of the school achieved by the principal does not make teachers to feel satisfied with their job</td>
<td>2.14</td>
<td>1.02</td>
<td>D</td>
</tr>
<tr>
<td>18</td>
<td>The tendency for the principal to neglect the rights and personal needs of the teachers leads to teachers’ lack of interest in their job.</td>
<td>2.91</td>
<td>1.03</td>
<td>A</td>
</tr>
<tr>
<td>19</td>
<td>The principals’ style of regarding teachers with opposing views as enemies of his administration does not discourage teachers from contributing to the administration</td>
<td>2.01</td>
<td>0.97</td>
<td>D</td>
</tr>
<tr>
<td>20</td>
<td>The principals’ strict insistence on teachers’ absolute obedience and compliance to his dictates or directives may lead to teachers’ insubordination.</td>
<td>2.94</td>
<td>0.99</td>
<td>A</td>
</tr>
</tbody>
</table>
Table 2a above indicated that items 16, 18 and 20 were rated positive while items 17 and 19 were rated negative and were above and below the criterion mean of 2.50 respectively. The mean scores 2.83, 2.91, 2.94 and their corresponding principals’ autocratic leadership style affect teachers’ job satisfaction negatively.

Also, the mean scores of 2.14, 2.01 and their corresponding principals’ autocratic leadership style do not as well ensure teachers’ job satisfaction.

**Table 2b:** Mean ratings of the Influence of the Democratic Leadership Style of Principals on Teachers’ Job Satisfaction.

<table>
<thead>
<tr>
<th>S/NO</th>
<th>ITEM DESCRIPTION</th>
<th>( \bar{X} )</th>
<th>SD</th>
<th>DECISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.</td>
<td>The free communication style applied by the principal in his administration does not encourage teachers to be part of the administration</td>
<td>1.80</td>
<td>0.84</td>
<td>D</td>
</tr>
<tr>
<td>22.</td>
<td>The idea of the principal taking the interest and welfare of the teachers into consideration in decision making makes the teachers to feel happy with their job</td>
<td>3.09</td>
<td>0.97</td>
<td>A</td>
</tr>
<tr>
<td>23.</td>
<td>The principals’ ability to allow teachers high degree of initiative and creativity in their work makes them to be more dedicated</td>
<td>2.99</td>
<td>1.64</td>
<td>A</td>
</tr>
<tr>
<td>24.</td>
<td>The ability of the principal to encourage interpersonal relationship among the teachers does not create positive work environment</td>
<td>1.60</td>
<td>0.52</td>
<td>D</td>
</tr>
<tr>
<td>25.</td>
<td>The ability of the principal to use praise and encouragement as motivational strategies induces better commitment to productivity.</td>
<td>3.48</td>
<td>0.55</td>
<td>A</td>
</tr>
</tbody>
</table>

From Table 2b each of items 22, 23 and 25 whose mean values were greater than 2.50 implied that teachers were satisfied with the principals’ democratic leadership style unlike items 27 and 30.

**Table 2c:** Mean Rating of the Influence of the Laissez-faire Leadership Style of Principals on Teachers’ Job Satisfaction

<table>
<thead>
<tr>
<th>S/NO</th>
<th>ITEM DESCRIPTION</th>
<th>( \bar{X} )</th>
<th>SD</th>
<th>DECISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.</td>
<td>Allowing teachers go about their work the way they want by the principal does not promote productivity</td>
<td>3.04</td>
<td>0.97</td>
<td>A</td>
</tr>
<tr>
<td>27.</td>
<td>Principal’s inability to take necessary decisions does not affect the teachers’ job satisfaction</td>
<td>2.12</td>
<td>0.98</td>
<td>D</td>
</tr>
<tr>
<td>28.</td>
<td>The principal’s attitude of shying away from his responsibilities as the leader makes teachers to loose interest in their job.</td>
<td>2.77</td>
<td>1.08</td>
<td>A</td>
</tr>
<tr>
<td>29.</td>
<td>Inability of the principal to specifically consider the welfare and feelings of teachers may lead to teachers being dissatisfied with their job.</td>
<td>2.96</td>
<td>1.02</td>
<td>A</td>
</tr>
<tr>
<td>30.</td>
<td>Inability of the principal to engage in strict supervision of teachers does not create undesirable behaviour among the teachers.</td>
<td>1.94</td>
<td>0.93</td>
<td>D</td>
</tr>
</tbody>
</table>
Table 2c showed that items 26, 28 and 29 with their corresponding mean scores do not ensure teachers' job satisfaction. Moreover items 27 and 30 were not acceptable leadership style and hence could create undesirable behaviour among the teachers.

**Research Question Three**

To what extent is the Influence of Leadership Styles of Principals on Teachers' Job Satisfaction Gender Dependent.

**Table 3: Mean Ratings of the Influence of Leadership Styles of Principals on Teachers' Job Satisfaction According to Gender.**

<table>
<thead>
<tr>
<th>Leadership Style</th>
<th>Item</th>
<th>Gender</th>
<th>( \bar{X} )</th>
<th>SD</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autocratic</td>
<td>16</td>
<td>Male</td>
<td>2.98</td>
<td>1.03</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>3.13</td>
<td>0.96</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>Male</td>
<td>1.93</td>
<td>0.89</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>1.98</td>
<td>0.83</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>Male</td>
<td>3.21</td>
<td>0.88</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>3.31</td>
<td>0.86</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>Male</td>
<td>1.88</td>
<td>0.87</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>1.94</td>
<td>0.83</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Male</td>
<td>3.01</td>
<td>0.94</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>3.39</td>
<td>0.89</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>Male</td>
<td>1.75</td>
<td>0.75</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>1.81</td>
<td>0.84</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>Male</td>
<td>3.07</td>
<td>0.99</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>3.38</td>
<td>0.76</td>
<td>A</td>
</tr>
<tr>
<td>Democratic</td>
<td>23</td>
<td>Male</td>
<td>3.40</td>
<td>0.63</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>3.48</td>
<td>0.62</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>Male</td>
<td>1.60</td>
<td>0.52</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>1.60</td>
<td>0.53</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>Male</td>
<td>3.51</td>
<td>0.55</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>3.56</td>
<td>0.55</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>Male</td>
<td>3.10</td>
<td>0.86</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>3.15</td>
<td>0.83</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>Male</td>
<td>2.01</td>
<td>0.89</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>1.87</td>
<td>0.85</td>
<td>D</td>
</tr>
<tr>
<td>Laissez-Faire</td>
<td>28</td>
<td>Male</td>
<td>3.12</td>
<td>0.90</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>3.42</td>
<td>0.76</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>Male</td>
<td>3.17</td>
<td>1.63</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>3.07</td>
<td>0.87</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>Male</td>
<td>1.03</td>
<td>0.87</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>1.96</td>
<td>0.81</td>
<td>D</td>
</tr>
</tbody>
</table>

Table 3 showed that Autocratic and Laissez-faire leadership styles have a negative influence on the job satisfaction of both the male and female teachers. Both agreed that the two leadership
styles do not enhance their job satisfaction. Moreover, the mean scores of both male and female teachers on the items under Democratic leadership style showed that both agreed that Democratic leadership enhances their job satisfaction.

**Null Hypothesis**

There is no significant difference in the mean ratings of male and female teachers on the influence of principals’ leadership styles on their job satisfaction.

**Table 4: t-test of Male and Female Teachers with Respect to the Principals’ Leadership Styles Influence on their Job Satisfaction.**

<table>
<thead>
<tr>
<th>GENDER</th>
<th>N</th>
<th>X</th>
<th>SD</th>
<th>DF</th>
<th>t-Cal.</th>
<th>t-Crit.</th>
<th>DECISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>110</td>
<td>2.74</td>
<td>2.75</td>
<td></td>
<td>0.16</td>
<td>2.05</td>
<td>Not significant</td>
</tr>
<tr>
<td>Male</td>
<td>170</td>
<td>2.58</td>
<td>2.61</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4 showed that the calculated t-value is 0.16 at 28 degree of freedom and 0.05 level of significance. Since the calculated t-value of 0.16 is less than the table value of 2.05, the null hypothesis is accepted as postulated. Therefore, there is no significant difference in the mean rating of the leadership style influence of the principal on the job satisfaction of male and female teachers.

**Discussion**

From the results of the data analysis made, it is obvious that Secondary School Principals inNsukka Education Zone adopt the three leadership styles under study. This finding is consistent with the view of Mgbodile (2004) who stated that despite the varying terminologies used by experts to describe management styles of leadership, it has been generally agreed that styles used by men in leadership position can be put into three main types namely; autocratic, democratic and laissez-faire leadership styles. Accordingly, heads of institutions belong to the category of men in leadership positions who exhibit those leadership styles in the school system.

The result also indicated that dominant styles of leadership were in the following order; autocratic, laissez-faire and then democratic. This showed that principals of secondary schools exhibit more of autocratic leadership style than democratic and laissez-faire styles. Autocratic leader is highhanded in his administration; he is self-centred and a leader who is the center of all the activities that go on in the establishment where he is a leader. The problem in this approach is that the principal may neglect other dimensions of leadership which when blended with autocratic style will enhance their leadership effectiveness as well as sustain the teachers’ job satisfaction.

However, secondary school teachers agreed that only democratic leadership exerts a positive influence on their job satisfaction. According to Obi (2003), employees are satisfied with democratic leadership because their opinions, comments and suggestions are needed for decision-making. This finding also agreed with that of Ezeuwa (2005) who observed that democratic leaders see their subordinates as colleagues and partners in progress with objective ideas for solving organizational
problems. The democratic dimension of leadership style is therefore a better predictor of teachers’ job satisfaction and school achievement.

On the influence of gender on teachers’ job satisfaction, data indicated that all the teachers, irrespective of gender agreed that only democratic leadership enhances their job satisfaction. However, they expressed no satisfaction with autocratic and laissez-faire leadership styles of the principals. This tendency of both male and female teachers showing satisfaction with democratic leadership is not in doubt because their opinions, comments and suggestions were always needed for decision-making.

The result of the t-test on the influence of principals’ leadership styles for male and female teachers indicated that the null hypothesis was sustained. The result showed that statistically significant differences do not exist between male and female teachers with respect to the influence of the principals’ leadership styles on their job satisfaction. This finding appears compatible with the finding of Eneasator (1993), which reported that there is no significant difference in satisfaction levels of males and females.

**Conclusion and Recommendations**

It is concluded from this study that secondary school teachers in Nsukka education zone adopted the following leadership styles; Autocratic, Democratic and Laissez-faire. The highest rating was given to autocratic leadership style. Teachers however, expressed satisfaction with democratic leadership, whereas they were dissatisfied with autocratic and laissez-faire leadership styles.

Consequently, the following recommendations are made;

- Principals should undergo in-service and refresher courses on the modern rudiments of leadership styles.
- The appointment of principals should be based on competence and dedication to duty.
- School administrators should give teachers more opportunities to participate in decision-making.

**References**


Novel Treatment of Selected Post Industrial Textile Waste into a Sustainable Product for Agriculture

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Doi:10.5901/jesr.2012.v2n9p53

Abstract

A statistical survey reports the fact that the total amount of willow dust generated, is about 80,000 – 85,000 tons per annum. [1] This willow waste is too short a fiber to be used for any textile application and is just disposed off as landfills. A better alternative for this waste was designed and thus the research aims in biomanaging this cotton textile waste by using three tier system of enzyme-earthworm-microbe interaction. Pretreatment and enzymatic treatment of the cotton textile waste enhanced good growth of earthworms with an additional benefit of reducing the toxicity of the wastes. The resultant vermicompost was a very good substitute for chemical fertilizer with a good source of carbon and appreciable amount of NPK. On addition of cellulose degraders, nitrogen fixers and phosphate stabilizers the compost can be converted into rich source of biofertiliser also. The efficacy of the prepared compost was analyzed using a pot culture study and the results were compared with control pot.

Keywords: willow waste, decomposing, composting, biocompost, vermicomposting, textile recycling

1. Introduction

In this era of green consumerism people’s preference for organic products has introduced number of inventory practices for the development and effective utilisation of cotton textile and its byproducts. Perspective of age old days: the population was less, needs were few and resources were abundant. The generation of waste was such that it got naturally recycled, being mostly biodegradable. Conversely, after the advent of industrial revolution different types of wastes came into existence which are often both non-biodegradable and highly hazardous.

The total cotton fiber consumption in our country is estimated to be 26 lakh tons per year, of which approximately 2, 10,000 tones of cotton dust (non-saleable waste) is produced during yarn manufacturing process. This willow waste is too short a fiber to be used for any textile application and is just disposed off as landfills, which if not degraded properly leads to infectious diseases and release of foul odour causing a hindrance to the ecosystem and people. Most of these wastes are disposed off by burning, which in turn increase carbon dioxide level in the atmosphere which adds on to the global warming. [2]

Comparative analysis shows that the cotton production has remained stagnated over the past few years wherein the main reason being loss due to pests. So in the process of increasing the productivity, more and more of synthetic formulations are used [3]. The latest set back in textiles is also the same abuse of chemicals in the form of fertilizers and pesticides, which have caused a downbeat on the health of animals, human and the general ecological balance. WHO report quoted that, every year 20,000 farmers die because of insecticides and their harmful effects. [4] Besides the fact that cotton is a fertilizer dependant crop, it has an undisclosed fact: that 65% of the chemicals
used during cultivation enter into both directly and indirectly into our food chain, which is extremely agonizing.

Natural fertilisers, compost and soil amendment have enabled organic cotton to a viable enterprise comment [5]. Therefore the waste was recycled into a biocompost by the use of vermicomposting and enzyme technology which can be a very convincing effort to reduce and recycle waste. Vermicomposting, in its broadest sense is waste minimization. In addition to creating home for millions of microorganisms it plays a vital role in reducing the toxicity of the wastes. Undoubtedly, the manure castings excreted by worms, is an effective biofertiliser, which has a high content of readily available minerals for plant growth, which can be an enormous relief to the above discussed hitch.

Cultivation of organic methods has helped farmers to improve sustainable productivity. Thus a research was designed to make the selected textile waste into an eco-friendly product that can be gifted from the industry that pollutes the maximum (textiles), to the industry most pioneering and essential to mankind that is, agriculture, which might reduce the curse on the former industry. Unlike recycling textile waste into a textile product again, the composting and vermicomposting will open up newer vistas in textile recycling technology. This is a new beginning which will throw smiles on our poor hard toiled farmer, by reducing the dependence, on costly and hazardous chemicals and pesticides.

2. Materials and Methods

2.1. Selection of Waste

Many types of waste like willow fly, raising fly, flat strip, dirty oily cotton, comber noil are produced during the processing of textiles. These are lifted by traders and get Rs 7/- to Rs 32/ per kg depending on the quality of waste. [2] But certain other types of waste like the willow waste/micro dust find no end use and are just disposed in the landfill. Due to lack of landfill sites and its related problems, we need to reduce our landfill waste drastically [6]. Reports say that the solid waste of industries should be biocomposted before applying to soil in order to achieve biological transformation of organic matter to avoid potential risks of pathogens [1]. The waste from the ginning factories are rich in minerals, tricarboxylic acids, proteins and thus good quality compost can be prepared from it [7]. Considering these facts willow waste was selected for the study.

2.2. Collection, Pre-treatment and Processing of Waste

The investigator visited nearby OESM (Open End spinning mills) and collected the willow waste in clean bags. The collected waste was loosened and checked for any metal particles and later transferred into a wide plastic bin.

Natural cellulosic fibers are known to be biodegradable, ecofriendly and don’t harm the natural ecological balance of the environment [8]. A very note worthy program, to reduce the amount of waste as landfill was done by a company named Sampson (Sampson County, 55 Agriculture Pl, Clinton, NC 28328) which implemented vermicomposting program that transforms high grade compost, from food, paper and cotton fiber waste [9]. Considering these facts, the willow waste was subjected to vermicomposting program.

The result of case studies suggests that cellulase can be used in the treatment of wastes from cotton industry. The three tier system of enzyme-earthworm-microbe interaction with a pretreatment and enzymatic treatment of waste material proves to enhance good growth of
earthworms. The resultant product with addition of cellulose degraders, nitrogen fixers and phosphate stabilizers can be converted into rich source of biofertilisers [10]. Taking this into consideration, the investigator subjected the collected waste to enzymatic treatment.

2.3. Treatment with selected enzymes

2.3.1. Selection of Enzymes:

Cotton fibers are basically made up of flexible cellulose [11] and the biodegradation of which can be facilitated by enzyme known as "cellulase" that can be produced by microorganisms like bacteria or fungi. Generally cellulosic material is biodegradable with species like trichoderma viride, aspergillus sp. and the cochlea helix pomatia as they have the ability to decompose cotton fiber. [Source: National Cotton Council and Cotton Inc. (United States) [13][14] Hence the researcher selected the enzymes cellulase and amylase for the study. The enzymes were extracted from the sources namely trichoderma species and Aspergillus niger respectively in the Bio-textile laboratory, Avinashilingam university for women, Coimbatore.

2.3.2. Selection of Source for Enzyme Extraction:

Cellulase can be obtained from cellulose substrate. [15] The dung of chewing animals is rich in cellulose enzymes. Apart from the fact that it is eco-friendly, naturally available and low cost enzyme. Also cellulase originating from trichoderma sp. fungus can also degrade cotton cellulose efficiently [16]. Amylase can be obtained from bacillus source [17] can act on cellulose and decreases its strength [10]

Taking into consideration these facts cow dung was selected as the source for extraction of enzymes.

2.3.3. Isolation and Screening of Selected Enzymes

Fungi was isolated from the cow dung by using serial dilution technique, sample suspension was prepared by mixing one gram of cow dung in 4ml of sterile distilled water and serially diluted up to $10^{-7}$ dilution, Aliquots from $10^{-4}$ dilution for fungi was used. Rose Bengal gram agar applying eight petri dishes were taken and sterilized in hot air oven at $110^0$ C for 10 mins. In this 0.1 ml of sample suspension was pour plated. Two hundred of Rose Bengal gram agar solution was taken in a conical flask and sterilized in the autoclave for 30 mins after 30 mins. The conical flask was taken out and 25ml of agar solution was poured to each sterilized petri plates. These plates were incubated at room temperature 25 to 2 degree C for seven days. After incubation the fungal colonies were identified visually

After incubation the colonies were identified visually and selected enzymes were extracted. Since the enzymes were used only for decomposing they were used in their crude form of nature. The extracted enzymes were stored in the fridge to be added alone with decomposing source.

2.4. Decomposing of wastes

Decomposition refers to reduction of living organism into simpler forms of matter [18] in which various environmental factors like moisture, temperature, presence or absence of oxygen play a prominent role. [19]
2.4.1. Selection of Decomposing Source

Cow dung is the digested residue of herbivorous matter which is acted upon by symbiotic bacteria residing within the animal's rumen. [20] Case studies reveal the potentiality of cow dung in the decomposition of disposable diapers and sewage sludge [21][22]. Also, fly ash waste mixed with cow dung and vermicomposted using Eudrilus eugeniae for 60 days, in different combinations showed that, 1:3 of fly waste and cow dung was found to be the best [23] On viewing the above detail, cow dung was selected as decomposing source to act with the collected waste.

2.4.2. Collection and Mixing of Cow dung

The investigator visited the nearby cattle farm early in the morning and collected cow dung and mixed with equal proportion of willow waste. Fifteen ml of the extracted cellulase and amylase enzymes were added to the mixture to ensure a composition for earthworm feeding. The process was repeated twice for a period of ten days and the material was overturned. The material was sprinkled with water and overturned every day. (Plate 1)

2.4.3. Preparation and addition of EM Solution

Effective microorganisms (EM technology) is a scientific method of improving soil quality and plant growth using a mixture of microorganisms consisting mainly of lactic acid bacteria, purple bacteria and yeasts which co-exist for the benefit of whichever environment they are introduced. The application of effective microorganism in waste management is remarkable and was prepared in the following procedure.

Powdered jaggery (75 gms) was dissolved in warm water and poured in a glass bottle of one liter capacity having a glass cap to cover airtight. The stock solution required for the preparation of EM was collected from the Department of Extension Education, Avinashilingam University for Women, Coimbatore. The stock solution was poured into the bottle. The remaining portion was filled with warm water. The bottle was kept away from direct sunlight (dark place) for a period of seven to ten days. The pressure built up was released by unscrewing the cap of the container once a day.

After a week, the solution colour changed from brown to light orange and also white mould on the top accompanied with a sweet sour smell. The solution was then ready to be used in the study [Catalogue National Environment Awareness Campaign (NEAC)]

Many factors determine the rate of decomposing of cotton. There are samples of cotton that remain for more than 10,000 years, but however under favorable conditions, cotton can decompose within a period of two weeks [24]. Considering this, the investigator thoroughly mixed the cotton waste with 15ml of the prepared Effective Microorganism solution.

2.5. Actual Decomposing

The collected willow waste was mixed with of cow dung, fifteen ml of cellulose, amylase and effective microorganism solution were all added. (Plate 1) Water was sprinkled once in two days and the mixture was turned thoroughly to maintain the pH and moisture. After 20 days the waste was found to have completely decomposed after which the earthworms were introduced. Care was taken to maintain the pH and moisture. When the mixture turned into light brown, with good smell
the willow waste vermicompost was ready. This waste was taken dried in shade and stored for pot culture study.

**Plate 1**
Collection and processing of willow waste

- Collection of willow waste
- Mixing of willow waste with cow dung slurry
- Addition of Effective microorganisms
- Mixing of wastes for decomposing
- Periodic turning and watering of willow waste
- Introduction of worms

### 2.6. Vermicomposting

A major portion of solid waste (more than 60%) is decomposable which can be used for vermicomposting [25]. The potential of earthworms have been proved in decomposing waste. Where the breakdown of organic waste can be made as profit, producing useful material and also reduce pollution [26]

#### 2.6.1. Selection and Introduction of Species

More than 3000 species of earthworms are found in nature among them only 5-6 are used in
agriculture [27]. Globally, *Eudrillus eugeniae* is popular for vermicomposting in subtropical and tropical countries [28] and thus the investigator selected the African earthworms, namely *Eudrillus eugeniae* (sp.), which is of engenous type and surface feeders in nature. One kilogram of earthworms Rs 250/- consisting of around 1000 worms were purchased from H5 Organics, Thudiyalur, Coimbatore. Small scale vermicomposting can be managed in plastic buckets, wooden or earthworm pots, cement tanks and metal brins having holes for proper variation. Considering the suggestion the waste decomposing was done in a plastic bucket.

### 2.6.2. Collection and storage of Prepared Biocompost

The earthworms perforated and loosened the willow waste compost resulting in an infinite numbers of lumps of worm casts. (Plate 2) Composting process can be marked as complete by the earthworms when the waste mixture turns into light brown or dark brown [29]. This change was seen in the bedding at the end of 14days. The composted waste was separated and collected in a wooden bin. (Plate 2) The vermibed is taken care of to maintain the pH, temperature and moisture. So it is periodically sprinkled with water. The finished compost was kept away from direct heat and sunlight as recommended [30]

![Plate 2](image)

*Collection and storage of vermicompost*

- Checking of the vermicompost (Loose brown particles with good smell)
- Periodical Collection of vermicompost (Top layer)
- Storage of vermicompost
- Sieving of vermicompost
- Ready for use
2.7. Analyzing the efficacy of the prepared vermicompost

In order to study the effectiveness of the prepared vermicompost pot culture study was selected.

2.7.1. Pot Culture Study

Pot culture experiments can be conducted to ascertain the enrichment in soil quality, growth response of selected plant species. Pot culture is the simplest form of hydroponics (growing plant with nutrients and not soil). It involves use of an inert medium such as greenmix in a plastic pot in place of soil.[31]

Plate 3
Pot Culture Study

Collection of Soil
Preparation of pots (sun drying)
Labeling of pots
Mixing of red soil and river sand

2.7.2. Selection of Plants

The major problem in growing cotton is use of chemical fertilisers and pesticides. In order to solve this problem the investigator wanted to evaluate the efficacy of prepared vermicompost to grow
cotton plant. Marigold, lady’s finger and green gram dhal are commonly used for pot culture study because of their short life span and ability to grow and flower quickly. Hence four plants namely cotton, marigold, lady’s finger plant and green gram dhal were selected for study. (Plate 3)

### 2.7.3. Selection and Purchase of Seeds

The cotton seed was selected based on lifespan and fiber qualities as the duration of the study was short. In MCU 13 variety, the fiber had many superior qualities. The staple length was 30.3mm, fiber strength was 23.0 g/Tex, fineness 4.2 and spinability as 35% producing 50s count fabrics. [32]. The fiber is very common in southern regions of Tamil Nadu with a lifespan of 150 days. Hence, MCU 13 variety was selected and purchased from the Central Institute for Research on Cotton Technology, Coimbatore. The seeds for the other three plants were purchased from Tamil Nadu Agriculture University, Coimbatore.

### 2.7.4. Purchase and Preparation of Pots

The investigator purchased a total of eight medium sized earthen pots of dimension 10” x 8” to grow and compare the plants. Four pots for the control sample and four pots to grow plants using the willow waste vermicompost. The purchased pots were cleaned with an emery paper and washed in a large tank of cold water.

The pots were immersed in the tank for 24 hours and later dried in sun. The pots were labeled in white enamel paint as per the nomenclature followed in the study. (Plate 3)

### 2.7.5. Preparation of Soil

The ideal garden soil should be deep, loose, fertile, well-drained with plenty of organic matter and also free of weeds and diseases. The usage of red soil is highly recommended since it dries slowly after a rain and the spaces between the soil particles are small and thus water moves through them slowly. Sandy soil, on the other hand, has many spaces and dry out quickly.

Red and sandy soils were thus mixed and used to substitute for a rich loam by adding organic matter. (Plate 3) Increasing the organic matter content of a red soil improves the internal drainage. Adding organic matter to a sandy soil increases its water-holding capacity and thus improves its fertility. [33] Based upon the studies the ratio of soil was mixed in the following proportion:

<table>
<thead>
<tr>
<th>Control pot</th>
<th>Red soil: river sand soil</th>
<th>1:1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pot with willow waste vermin compost</td>
<td>Red soil: river sand soil: vermicompost</td>
<td>1:1:3</td>
</tr>
</tbody>
</table>

### 2.7.6. Growing of Plants

The prepared soil was filled and the seeds were sown. Care was taken to maintain the growth of the plants by proper watering and maintenance. The growth of the plants was recorded every day and factors like germination, growth, root length, flowering ratio and vegetable growth were regularly recorded. (Plate 4)
2.8. Evaluation

Wikipedia defines evaluation as the systematic determination of merit, worth, and significance. It is used to characterize and appraise subjects of interest. Hence the prepared vermicompost evolved from the willow waste were tested.

2.8.1. Evaluating the prepared vermicompost

The presence of macro and micronutrients greatly affects the efficiency. The level of pH helps in maintaining the salinity and alkalinity of the soil. The Electrical conductivity is important in improving plant nutrient absorption and organic carbon for improving the soil texture [34]. About 78.6 % of nitrogen is found in atmosphere, soil microorganism’s plays a great role in fixing this atmospheric nitrogen into the soil. This fixation is done by nitrogen fixing bacteria. This is found in the intestine of cow and its products of cow like the cow dung, etc. [35] Since the research includes cow dung, the nitrogen content of the willow waste vermicompost was evaluated.

The organic carbon content and fertility status of NPK is higher in vermicompost. [36] The worm casts ingested soil often have high content of soil organic carbon and nutrient than surroundings soil [37] also nitrogen is found in urine of the earthworms gets mixed with the soil and hence found in casts also. The nitrogen in earthworms casts is completely assimilated by plants thus provides significant source and available nutrient for plant growth [38]. The worm casts were rich in water soluble phosphorous [39] and inorganic nitrogen and phosphates.

Therefore, factors like pH, electrical conductivity, nitrogen, phosphorous, potassium, organic carbon, copper, zinc, iron and manganese were evaluated for the prepared vermicompost.

2.8.2. Evaluation of growth

The plants grown using the vermicompost made from willow waste had very good growth rate compared to the control pot. (Plate 5) The harvested plants were washed in running water and individual plants were recorded for the growth and development. The parameters like width (W)
and length (L) of all leaves of the cotton plants were measured using a simple ruler. In addition, plant height, root and shoot length were measured [40] and recorded for all the three types of plants.

Plate 5
Growth of plants at the end of the study

From the top to bottom (row wise)
Row of control pot
Row of willow waste vermicompost plants

From left to right (column wise)
Cotton MCU 13 variety
Lady’s finger
Marigold
Green gram dhal

2.8.2.1. Evaluation of Germination Index and Height

A seed starts to grow from the time it begins to germinate. When the seed starts to germinate the main root comes first and then the skin starts to split and later leaves appear [41] For high productivity, the adequate stand of crop plants largely depend on seed germinability and seeding vigor under a wider range of climatic conditions [42] This process requires a large amount of energy, [43] therefore the investigator noted the days when germination started in order to see if the plants were healthy. The height of the plants was noted for a period of 60 days.

Plate 6
Evaluation of the growth index of plants
Evaluating the growth index of plants grown using willow waste vermicompost

2.8.2.2. Root and Shoot Length of Plants

Roots allow a plant to absorb water and nutrients from the surrounding soil and a healthy root system is the key to healthy plant. The root: shoot ratio is one measure to assess the overall health of the plants. [44]

Thus the investigator recorded the root and shoot length of all the plants after 60 days. (Plate
2.8.2.3. Leaf Area Index of Plants

Leaf area measurement is useful for small plant populations [45]. Leaf area index (LAI) is simulated using a fairly simple function based on the heat unit index and on parameters that describe the shape of the LAI curve [46]. Compost supplemented plants generally have greater leaf areas that in turn facilitate increased photosynthesis and thus better growth. The leaf area was measured to evaluate the efficacy of prepared biocompost in cotton plant. (Plate 7)

3. Results and Discussion

The findings of the research work were as follows

3.1 Parameters of prepared Willow waste vermicompost is listed below

![Plate 7](image)

**Greater leaf area index in cotton plant**

<table>
<thead>
<tr>
<th>S. No</th>
<th>Parameters</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pH</td>
<td>7.20</td>
</tr>
<tr>
<td></td>
<td>Electrical conductivity EC (dS/m)</td>
<td>1.85</td>
</tr>
<tr>
<td></td>
<td>Total nitrogen (%)</td>
<td>0.62</td>
</tr>
<tr>
<td></td>
<td>Total phosphorous (%)</td>
<td>0.35</td>
</tr>
<tr>
<td></td>
<td>Total potassium (%)</td>
<td>0.52</td>
</tr>
<tr>
<td></td>
<td>Organic carbon (%)</td>
<td>12.1</td>
</tr>
<tr>
<td></td>
<td>Copper (mg/kg)</td>
<td>180</td>
</tr>
<tr>
<td></td>
<td>Zinc (mg/kg)</td>
<td>210</td>
</tr>
<tr>
<td></td>
<td>Iron (mg/kg)</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Manganese (mg/kg)</td>
<td>12</td>
</tr>
</tbody>
</table>

3.2 Comparison of the Prepared vermicompost with compost obtained from other sources:
The results of the vermicompost obtained from other sources namely farmyard waste, slaughter waste, human and animal excreta was compared for the nitrogen, phosphorous, potassium and carbon. The results portray that vermicompost made from the willow waste is a very good source of carbon with appreciable amount of NPK values.

3.3 Leaf Area Index of the Cotton Plant:

3.4 Root and Shoot Length of the plants:
3.5 Germination Index

The germination rate of the plants was found maximum of 90% in plants grown using the willow waste vermicompost. After 18 days, the maximum 16 germinated plant was recorded from the willow waste vermicompost sample and minimum 5 in Control pot.

3.6 Growth Rate of Plants

On viewing the total mean growth, the maximum and minimum growth was observed as 60cms in marigold with willow waste vermicompost and minimum 15cms in green gram dhal grown with willow waste vermicompost.

3.7 Yield of the Grown Plants

On evaluating, the marigold plant grown with willow waste vermicompost had 12 flowers and 3 buds compared to 5 flowers 1 bud in the control pot. The yield in lady’s finger was 14vegetables in willow waste vermicompost plants and minimum 1 vegetable in control pot. The observation on the yield of pods was found to be 11 in willow waste vermicompost green gram dhal and minimum 2 in control pot.

4. Conclusion

The finding of the study in the selected cotton textile waste namely willow waste can be completely decomposed into vermicompost. When supplemented to the plants with short life span they had a remarkable difference on the overall growth of the plants viz., root length, shoot length, leaf area index.

Rapport for ecofriendliness is alarming in all vistas, at a greater pace and the awareness about textile recycling is gaining increased importance in recent times. Many researches are being designed to innovate new concept and technologies, but not many focus on the used up and wastes discarded in the landfills. Adding on to the fact, a survey report denotes that, India is expected to grow around 3-5% in the area of disposals, that inturn is going to add on to the landfill pollution. This process of recycling, transforms the disposal waste into a valuable product for agriculture, in an ecofriendly way, at an economically viable basics. Now, let every individual and institution, think and act as a responsible trustee, of Earth.

5. Acknowledgement

The authors would like to thank the Department of Science and Technology for the assistance provided through fellowship and funding.

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Enhancing Sustainable Development in Nigeria: A Challenge for Social Studies Education

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Abstract

This paper examines the roles and effects of Social Studies Education in enhancing sustainable development. It discusses the concepts development, sustainable development and Social Studies. It finally discusses the role of Social Studies in enhancing sustainable development in Nigeria.

Keywords: Development, Sustainable Development, Social Studies

Introduction

The concept of sustainable development was popularized in 1987 with the publication and research work of Brandt Land report by the World Commission on Environment and Development. It therefore became universal word for gradual change, advanced growth and increase in the outlook of thing. However, in 1992 the United Nation Conference on Environment and Development (UNCED) held a meeting in Rio de Janeiro to discuss the planet dwindling resources in the face of an unrestrained economic growth and the failure of human kind to achieve equitable development. The ‘Earth Summit” as the UNCED was called resulted into countries agreeing on the Rio Declaration Setting of 27 principles for achieving sustainable development and it was complimented by Agenda 21.

The history of nation is generally characterized by efforts and a determination to gradually but steadily move towards a stage of maturity, and a state of well-being for the individuals that constitute such nations. Nigeria as a nation is blessed with vast human and natural resources several conceited efforts have been made and are still ebing made to properly harness and use these available resources to improve the living conditions of the people through policy initiatives, projects and general infrastructural facilities. However, prevailing conditions in virtually all spheres of life have shown that the nation have not attained the level of development commensurate to its wealth and potentialities to make its teeming population irrespective of geographical location, social status, gender to live comfortably. This has raised lots of concerns and questions. Hence, the need for sustainable development

This paper therefore examines the concept of sustainable development and ways through which Social Studies education can improve the developmental process. The paper finally suggests some methods of achieving sustainable development.
Conceptual Framework

(i) Sustainable Development

The term development generally mean more efficient, more predicting and progressive way of doing things than for previous ways of doing it. Seer, (1997) describes development as involving more than economic growth but also including conditions which people in a country have inadequate food and job and income inequality among them is greatly reduced it.

Sustainable development connotes gradual, continued, advanced growth. Going by the meaning of the term one can deduce that Nigeria is yet to attain sustainable development. It is probably because of this that the country has consistently been listed among developing / underdeveloped nations. Sustainable development has meant different things to different writers; some have tended to focus on production and thus narrowly viewed it as a process of achieving a buoyant economy (Stepanov, 2004; Adesanya, 2004). Other focused on the natural environment (Taranet and Alyona, 2004; Raheem and Ogunyemi, 2004). Some saw it as all about achieving an ecological balance yet for others, it is a process that include all what humanity and nature require for their existence both at the present moment as well as the future (Scoullos, 2004; and Newmon, 2004).

However, sustainable development is a multi-dimensional process involving the re-organization and re-orientation of the entire social, economic, political and all units of the society. It also involves a transformation in the societal values and institution, for the betterment of the society.

(ii) Social Studies

The definition and meaning of Social Studies are many and varied. This is based on the opinion and background of the scholars. Some of these definitions are based on the content of the discipline while others are according to the methods and purpose of the discipline. Generally, Social Studies is regarded as the study of man in his physical and social environment. This definition connotes the relationship of human being and his environment i.e. how human being influences the environment or the reciprocal influence of environment on human activities. The Western Canada Protocol for collaboration in Basic Education (2000) describes Social Studies as the:

Study of people in relation to each other and to their world. It is an inter-disciplinary subject that draws upon History, Geography, Economics, Law, Political Science, and other disciplines. Social Studies focuses on peoples relationship with their social, physical, spiritual, cultural, economic and technological environment.

In the same vein, Ogundare (2000) describes Social Studies as the study of man and problems of survival in an environment and how to find solution to them. It is also the study of human activity and process of thinking, decision making, value analysis and inquiry skill.

Social Studies is a school subject which emphasizes on human being and his environment. It is therefore an integrated study of man and his environment both physical and social emphasizing on cognition, functional skill and desirable attitude and actions fr the purpose of producing effective citizenry.
Role of Social Studies in Enhancing Sustainable Development

Social Studies as a school subject is concerned with existence relationship between man and his environment. This involves the reciprocal influence of human being on the environment and how human being also influences the environment. However, Social Studies is broad and integrated in nature.

Social Studies helps citizens make informed judgment about the nature of civic life, politics and government, and why politics and government are necessary. Such knowledge will promote the understanding of the nature and importance of civic society in the art of governance. A vital civic society prevents the abuse or excessive concentration of power by government. (Civic framework for the 1998 national assessment of educational progress (NAEP) (U.S.A).

Social Studies work towards the promotion of attitudinal changes in the life of the citizens, with a resultant effect of creating effective citizens. It is in support of the above that Engel (1977) reveals that the teaching of Social Studies in school is expected to contribute to an acquisition and sustenance of desirable attributes characteristics of effect of citizenry within the democratic society. Because attitudes according to Allport (1966), determine for each individual what he will see and hear, what he will think and what he will do, they play a vital role in controlling our emotional responses to our life situations.

Social Studies curriculum intends to promote cultural values and to eschew ethnocentrism. The philosophy guiding the National Policy on Education rests on the integration of the individuals into a sound and effective citizens with equal educational opportunities for all citizens of Nigeria at the primary, secondary and tertiary levels both inside and outside the formal school system (Federal Republic of Nigeria, 1981:7).

It is against this background that the National Policy on Education spelt out the following aims and objectives:

1. The inculcation of national consciousness and national unity.
2. The inculcation of the right type of values and attitudes for the survival of the individual and the Nigerian society.
3. The training of the mind in the understanding of the world around.
4. The acquisition of appropriate skills, abilities and competences both mental and physical as equipment for the individual to live and contribute to the development of his society.

Based on these national aims and objectives of education, in 1982, the Joint Consultative Committee (JCC) on Social Studies identified the following as the proposed objectives of teaching the subjects:

a. To create an awareness and an understanding of our evolving social and physical environment as a whole in its natural man-made, cultural and spiritual resources together with the rational use and conservation of these resources for national development.

b. To develop a capacity to learn and to acquire certain basic skills, including not only those of listening, speaking, reading and writing, and of calculation, but also those skills of hand and head together with those of observation, analysis and inference which are essential to the forming of a sound social, economic and political judgment.

c. To ensure the acquisition of that relevant body of knowledge and information, which is an essential pre-requisite to personal development as well as to a positive personal contribution to the betterment of mankind.

d. To develop a sympathetic appreciation of the diversity and interdependence of all members of the local community and the wider national and international community.
(e) To develop in students positive attitudes of togetherness, comradeship and cooperation towards a healthy nation, the inculcation of appropriate values of honesty, integrity, hardwork, fairness and justice at work and play as one's contribution to the development of the nation.

While these objectives are set out to achieve the national objectives, Ajetunmobi (2000) opines that Social Studies as a course of study is capable of equipping the learners with the necessary skills, knowledge and attitudes for the betterment of the society.

Furthermore, Social Studies enhance the knowledge of the learner towards a better understanding of the different ethnic groups in Nigeria as well as their peculiarities. Learners are made to appreciate the unity in diversity as well as the nature of relationship between people of different cultural background.

Students will also learn that the individuals and the nation at large will develop through peaceful relation, borrowing of positive values from one another and the understanding of where a particular group has a comparative advantage over the other groups. Social Studies discourage the spirit of ethnicism through much emphasis on the common values as a nation. Also, through this discipline, students are made to be aware of some of the factors that may inhibit peaceful co-existence or hinder social development of the society at large, as a result, learn to avoid such variables.

Added to this, the learners are exposed to the idea of team spirit, that no individual is an island, and that no ethnic or sub-ethnic group is self sufficient. The spirit of cooperation, love, togetherness, sharing and tolerance are taught through the discipline content. The diversities among different groups on cultural traits are not only taught for the sake of knowledge, but are also taught to be respected and appreciated. Through such respect and appreciation, the inculcation of the spirit of national consciousness and unity is achieved. The discipline gives a unique opportunity for the learners to appreciate the inter-relationship between various disciplines especially in relation to the society.

**Conclusion**

Sustainable development through Social Studies education can be achieved through envisioning people to imagine the future through critical thinking and reflection by learning to question our current beliefs and to recognize the assumptions underlying our knowledge, perspective and opinion promoting dialogue and negotiation, learning to work together through skills acquisition programmes for ourselves and the future generation. These can be achieved through overcoming the challenges stated in this paper.

**Recommendations**

(i) Emphasize on offering Social Studies education not as a subject at senior Secondary School Certificate Examination (SSCE) or National Certificate Examination (NECO) but also as a core subject in the aforementioned examination in order to achieve its goals for the society.

(ii) Social Studies education should be made a core subject at the National Policy Institute for senior civil servant and policy makers so that policy makers will be abreast with societal problems and be ready to proffer solutions.
(iii) Government should make some aspects of Social Studies as a compulsory general course in the tertiary institution in order to sensitize students on the need of social issues in the society.

(iv) There should be provision for enhancing training facilities and teaching resources and aid.

(v) Social Studies teachers are expected to be a better model of behaviour for pupils, students and society.

(vi) Government should encourage in service training programme for Social Studies teacher to enhance their performance in enhancing sustainable development.

(vii) There should be regular seminar, conference and workshops to Social Studies teachers to improve their teaching skills.

(viii) Nigerian educational planners should as a matter of urgency, promulgate a functional policy for the study of Social Studies at all level of learning in Nigeria.

References


An Online Shopping Cart System for Katako Market in Nigeria

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Abstract

The main objective of this work is to develop and implement an online shopping system that will allow customers to buy product online. The work tends to incorporate some potentials of internet into the electronic payment system by developing a web based application which will handle both the transaction procedure and printing of payment receipt by customers. It is aimed at replacing the traditional manual system of transaction considering technology advancement. The implementation of the system is done using Apache as web server with extended support for PHP and MYSQL.

Keyword: Online shopping cart, E-commerce, and Katako

1. Introduction

The advent of technology has change the way business is conducted today and some difficult task have become simpler with the involvement of the internet. The internet is a network of computers across the globe and the purpose of the internet is resource sharing as well as communication. However, the greatest advantage of the internet is that it does not have physical or geographical restriction. It can be accessed from any part of the globe [2].

In the early 1990s the business and consumer world encountered a new way of trading on the internet called Electronic commerce (e-commerce). Over the years shopping are being done manually but with the introduction of virtually online shopping, it has enhanced shopping of items. In view of many organizations and people laboring in the area of e-commerce it has become very certain that e-commerce is here to stay. Hence organizations and customers are trying to get maximum benefit from it.

E-commerce (electronic commerce or EC) is the buying and selling of goods and services on the Internet. In practice, E-commerce and e-business are often used interchangeably. E-commerce (or electronic commerce) is any business transaction whose price or essential terms are negotiated over an online system such as Internet, Extranet, Electronic Data Interchange network, or electronic mail system. The process of taking money via credit card transactions, PayPal and other forms of payment - in exchange for a service or product sold via the internet, is E-Commerce. Online electronic payment systems are widely used in e-commerce which includes whole sale payments, wire transfer, recurring bill payments and so on [2]. An electronic payment portal is an easy way to make transaction possible. It is fast, easy, save and reliable for service provider and their customer. It also allow customer to compare price of goods as many as they want.

2.1 Current State of Electronic Transaction in Nigeria

Electronic payment is a relatively new phenomenon in Nigeria. Most transactions in the country are done with cash. This is because cash remains the preferred medium for payment in the country.
Poor awareness of e-payment solutions, poor banking culture, lack of trust and soon have been fingered as responsible for the high volume of cash transactions in the country.

Cheques for many years have been the only option to cash money in the economy. However, cheques have not been acceptable to merchant because of corruption and mistrust that it creates. Incidence of bounce cheques is very high making merchants cautious in accepting cheques. This was also because of lack of an electronic means of verifying valid cheques. Part of the problems was also due to the poor interconnection of banks and lack of an electronic cheques clearing system [5].

Nevertheless, today banks now have their branches interconnected together. The Central Bank of Nigeria (CBN) has also introduced inter-bank electronic cheques clearing system which has greatly reduced the time it takes to redeem cheques. Despite these positive developments the fate of paper cheques in the economy seems to have been sealed. For any payment system to be able to replace cash (or at least compete with it) it must win the trust of merchants in the economy. For this to happen there must be a way for merchants to verify the validity of the purchase. The payment solution must also be easily convertible to cash, since most merchants in Nigeria are in business on subsistence basis. There must be a way to use the money they made for the day to buy what they need for the day or for the following day[1].

This is where e-payment or e-transactions solutions come in. This payment solutions target most of the concerns of merchants and more. However, despite its advantages e-payment solutions have not gained much ground [4].

There is no doubt that the internet has added a great deal to the quality of human life in the contemporary world. It has knitted the world together as a global village. However, the emergence of electronic commerce has also brought with it a number of legal and socio-economic problems, especially in the developing nations such as Nigeria.

Making payment of goods and services bought through the internet poses unique problems because of the fact that the parties may be thousands of kilometers apart. The problems associated with internet payment are in relation to the inability of the internet to guarantee the safety of such payments and the possibility of duplicating payment, since a computer could potentially become a forger of digital banknotes [6].

2.2 The Internet Payment System

The commercial development of the internet has led to the creation of various payment systems specifically designed for Internet commerce. These payment systems include cyber cash, electronic cash, online credit cards and micro payments. Over the last two years there have been a number of initiatives on the Online Payment Front. Ever since the dawn of e-commerce, Credit Cards have ruled the roost, primarily because they were already in wide circulation and used extensively by the brick and mortar business. However, while credit cards are great for day to day purchases in the physical world, they also come across one big problem in the virtual world.

In spite of the considerable growth in the use of Internet for various financial transactions, Nigeria’s entry into E-Commerce was late, with the most significant development occurring in late 2004, when Visa International acquired a 13% stake in Value-card in Nigeria.

However, electronic funds transfer over private and corporate financial networks is considered to be more secure than payments made over open networks like the Internet. Generally, electronic payment system portal must exhibit the following characteristics.
a. Availability and reliability: This implies the ability to make and receive payments within an appropriate period of time. In the event of network or system failure, no customer would agree to take responsibility for lots of money.

b. Integrity: Once a payment system guarantees integrity, it means that its data are kept intact irrespective of accidental error or malicious intent.

c. Accountability: this is the ability of a payment system to ensure that the partners involved in a communication activity are the actual sender and recipient, so that in case of any breach in communication, the partners can be held responsible.

d. Security: It describes the means whereby knowledge of transaction contents is restricted from unauthorized disclosure.

3. Materials and Methods

An online shopping cart system will be designed and implemented using MySQL as the database, Apache will be web server to provide basic functionality of the web services. PHP will be used as scripting language to program the server side that manipulates the knowledge in the database [3].

4. Architectural Design

The factors considered in designing the online music portal system are Interoperability and accessibility with minimum requirements on the user’s side. Due to large flow of information delivery over the Internet, the system is implemented as a standard Internet application. The client side requires no more than standard Internet browser installed on the local computer, while the main application functionality is assured by the server side. Figure1. Illustrate Online shopping cart system Architecture.

This includes, user interface made up of access services points (shown as client system below) at the remote site, a high speed, highly reliable and scalable regional network and content management gateway with database server. This architecture allow users to access the system via the Internet using hypertext transfer protocol and the user request is transformed into a structured query language using a PHP common content management gateway, which in turn passes it to the appropriate backend system. The common content management gateway provides a single point entry to the system [7].
5. Implementation and Result

Implementation involves method and process used in the system design and the delivery of the new system into production. It simply means the conversion of a new system design into operation which entails creating compatible files, installation of software and hardware, running program and training the user/stake holders on how to use the system designed.

Authentication and authorization

Administrator’s authentication is necessary for security reasons and to deny unauthorized users from using the application. Hence the login form requires a username and password in order to fully access the product.
This page provides customer with information about some goods and how they can register with the site. It has four links, i.e. (Home, About Us, Product and Contact).

Figure 3. Home page

This is the page that a customer can view products. It is the section that contains items description and once a particular item is clicked, it will prompt login page.

Figure 4. The Product page

This is a page where payments are made by customer after selecting items. All fields must be filled appropriately including the delivery address and credit card number. However, to make
payment successfully the company must be register with Inters witch that will enable customer to print his/her receipt.

6. Summary and conclusion

The Online shopping cart is one step towards increasing productivity and quality of service in Shopping. The research work describes the design and implementation of an online shopping system environment that could be used to buy product and make payment online. In this research, we design and implemented a web-based shopping cart that is loosely coupled.

References

Active Learning Strategies and Student Learning Outcomes Among Some University Students in Barbados

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Abstract

Active learning is a crucial component in the learning process; the learner needs to be actively engaged during the lecture for effective learning to take place. This study therefore investigated the relationships between the active learning strategies (discussion, video clips simulation, game show, role-play, five-minute paper, clarification pauses, group work) and the students' learning outcomes (SLOs) among a sample of 158 undergraduate psychology students in The University of the West Indies, Barbados. They responded to Active Learning Strategies Questionnaire and Student Learning Outcomes Assessment Scale. Results revealed statistically significant positive correlations between active learning strategies and student learning outcomes; so also the active learning strategies contributed 14% (Rsq = 0.139) to the variance being accounted for in student learning outcomes and this was found to be statistically significant (F (1,156) = 25.23, p < .05). Additionally, video-clips simulation emerged as the best active learning strategy and had the highest correlations with student learning outcomes (r=0.340, p<0.05). These results were discussed in the light of the importance of the active learning strategies promoting learning among the university students.

Keywords: Student learning outcomes (SLO), active learning strategies, active learning, undergraduates

Introduction

There is a growing realisation that students need to do more than just listen to learn in a changing environment. Active learning is a key element in the learning process and most adult learning models view interaction (active learning) as a crucial component (Mantyla, 1999). Paulson and Faust (2010) refer to active learning as anything that students do in a classroom other than merely passively listening to an instructor's lecture. This includes everything apart from listening practices which help the students to absorb what they hear, to short writing exercises in which students react to lecture material, to complex group exercises in which students apply course material to "real life" situations and/or to new problems. Likewise, Chickering and Gamson (1987) suggest that for students to be actively engaged, they must do more than just listen: they must read, write, discuss, or be engaged in problem solving and take part in cooperative learning and group activities. Most importantly, to be actively involved, students must engage in such higher-order thinking tasks as analysis, synthesis, and evaluation. Considering the components of active learning strategies, (Mantyla, 1999) posited that good active learning activities are the same, whether presented in traditional or in online environments and activities should among other things have a definite beginning and ending; clear purpose or objective and a feedback mechanism.
Importance of Active Learning

Investigators suggested that active participation strengthens learning regardless of environment (Harasim, Starr, Teles, & Turnoff, 1997); active learning requires “intellectual effort, encouraging higher-order thinking (analysis, synthesis, evaluation)” and provides a means for the learner to assimilate, apply, and retain learning (Bonwell & Eison, 1991; Harasim, et al, 1997). It was further suggested that strategies promoting active learning are superior to passive learning (lectures) in promoting the development of student’s skills in thinking and writing (Bonwell and Eison, 1991). Active learning accommodates a variety of learning styles, promotes student achievement, enhances learner motivation, changes student attitudes, and basically, causes learners to learn more (Astin, 1985). Bonwell and Eison (1991) contended that from a preference perspective, students generally prefer strategies promoting active learning to traditional lectures and other passive methodologies. Use of these techniques in the classroom is vital because of their powerful impact upon students’ learning. Investigators evaluating students’ achievement have demonstrated that many strategies promoting active learning are comparable to lectures in promoting the mastery of content but superior to lectures in promoting the development of students’ skills in thinking and writing (Harasim, et al, 1997). Furthermore, some cognitive researches have shown that a significant number of individuals have learning styles best served by pedagogical techniques other than lecturing. Therefore, a thoughtful and scholarly approach to skilful teaching requires that faculty become knowledgeable about the many ways strategies promoting active learning have been successfully used across the disciplines. Further, each faculty member should engage in self-reflection, exploring his or her personal willingness to experiment with alternative approaches to instruction.

In further consideration of the importance of active learning, research findings also revealed that for the past decades, the majority of college faculties still teach their classes in the traditional lecture mode in which professors talk and students listen, dominate college and university classrooms. Some scholars have criticized traditional method of teaching and argued that it is boring and found that it is one of the factors responsible for absenteeism among the tertiary education students in Nigeria and Barbados, (Fayombo, Babalola and Olaleye 2012) and also among the students in the University of Canterbury, New Zealand, (Hunter and Tetley 1999). Thus, the students are likely to miss lectures because they are not actively involved in the classroom activities and if the content of the lecture did not match the changing environment which are characteristics of traditional lecture method.

Active Learning Strategies and Student Learning Outcomes

Bonwell and Eison (1991) described active learning strategies as those that involve “students in doing things and (have the students) think about the things they are doing” In an effective learning environment that incorporates active learning strategies, “greater emphasis is placed on students’ exploration of their own meaning, attitudes, and values” (Bonwell & Eison, 1991; Mantyla, 1999). Additionally, Wiggins and McTighe (1998) emphasized that good activities develop deep understanding of the important ideas to be learned. To do this, the activities must be designed around important learning outcomes and promote thoughtful engagement on the part of the student. The activity suggested by Ruhl, Hughes and Schloss, (1987) for example, encourages students to think about what they are learning. Adopting instructional practices that engage students in the learning process is the defining feature of active learning.
Student learning outcomes (SLOs) are statements that specify what students will know, be able to do or be able to demonstrate when they have completed or participated in a programme/activity/course/project. Outcomes are usually expressed as knowledge, skills, attitudes or values. (Student Learning & Outcomes Assessment; University of Rhode Island). Learning outcomes therefore are statements of what a student should know, understand or be able to do at the end of a learning activity such as lecture, a module or an entire programme (Kennedy 2006). Thus, the emphasis is on the learner regarding the ability to do something using the terms like define, list, identify, name, recall, analyse, calculate, design, and on teaching —aims and objectives and use of terms like know, understand, be familiar with.

Some have found some relationships between learning strategies and learning outcomes. Ruhl, Hughes & Schloss, (1987) show some significant results of adopting the pause procedure among a sample of 72 students over two courses in each of two semesters. The researchers examined the effect of interrupting a 45-minute lecture three times with two-minute breaks during which students worked in pairs to clarify their notes. In parallel with this approach, they taught a separate group using a straight lecture and then tested short and long-term retention of lecture material. Short-term retention was assessed by a free-recall exercise where students wrote down everything they could remember in three minutes after each lecture and results were scored by the number of correct facts recorded. Short-term recall with the pause procedure averaged 108 correct facts compared to 80 correct facts recalled in classes with straight lecture. Long-term retention was assessed with a 65 question multiple-choice exam given one and a half weeks after the last of five lectures used in the study. Test scores were 89.4 with the pause procedure compared to 80.9 without pause for one class, and 80.4 with the pause procedure compared to 72.6 with no pause in the other class.

Researchers also found that cooperative groups encourage discussion of problem solving techniques and avoid the embarrassment of students who have not yet mastered all of the skills required (Millis & Cottell, 1998; Feden, & Vogel, 2003). Qin, Johnson, and Johnson, (1995) reported that cooperation promotes higher quality individual problem solving than does competition. The result stems from the finding that individuals in cooperative groups produced better solutions to problems than individuals working in competitive environments. While the finding might provide strong support for cooperative learning, it is important to understand what the study does not specifically demonstrate. It does not necessarily follow from these results that students in cooperative environments developed stronger, more permanent and more transferable problem solving skills.

**Present Study**

From the literature reviewed, it is evident that active learning strategies are necessary for students’ involvement during lectures and important in achieving learning outcomes, yet this had not been investigated among the UWI students in Barbados to find out the relationships between active learning strategies and student learning outcomes (SLOs). In the present study, a wide variety of active learning techniques which supplement rather than replace lectures and the evidence for promoting learning outcomes were incorporated into the classroom activities. This study is therefore conducted to find out whether active learning strategies (video clip simulations, discussion, game show, clarification pauses, role play, one-minute-paper, group work,) will influence learning outcomes among some psychology undergraduate students taking PSYC 2009: Learning Theory and Practice Course at the University of the West Indies, Barbados with the aim of finding out whether these strategies will influence the learning outcomes thereby suggesting ways of
incorporating the strategies into classroom activities for effective learning. This study posits that active learning strategies will predict the student learning outcomes (SLOs).

**Aims of Study**

Specifically, the following four research questions were addressed in this study:

1) Were learning outcomes satisfactorily achieved after the lectures?
2) Were the students actively engaged in the lectures?
3) Which of the learning strategies was most engaging for the students?
4) Will there be significant relationships between the active learning strategies (video, discussion, game show, clarification pauses, role play, one-minute-paper, group work,) and the learning outcomes?
5) Will the active learning strategies predict student learning outcomes?

**Methods**

**Participants**

Out of 189 students, only 158 students participated in the class activities in the Learning Theory and Practice Course at The University of the West Indies, Cave Hill Campus, Barbados, 2011/2012 session. Their age ranged between 18- 60years (Mean age 39.0years, SD = 1.73years). There were 59 males and 99 females, 90 from the Faculty of Social Sciences; 68 from the Faculty of Humanities & Education; Pure and Applied Sciences; 107 were Barbadians while others were from other Caribbean Islands- St Vincent, Trinidad and Tobago, St Lucia, Jamaica, Dominica and Grenada.

**Measures**

The two instruments used to collect data in this study were: Active Learning Strategy Questionnaire and Student Learning Outcomes Assessment Scale developed by the researcher. **Active Learning Strategy Scale** has three sections. Section A comprises of the demographic variables such as gender, faculty/department, year of study, nationality, age etc. Section B consists of 7 close and open ended questions designed to find out whether the students have been participating in the different class activities involving the active learning strategies. Items include:

a. Did you participate in game - show during the lectures? Yes No
   If yes, how many times? ______________
   If no, why not? ____________________________

b. Have you ever role played during the lectures? Yes No
   If yes how many times? ______________
   If no, why not? ____________________________

Section C consists of seven subscales with 42 items designed to measure the different active learning strategies (video, discussion, game show, clarification pauses, role play, one-minute-paper, group work) for promoting learning. There are six items in each of the subscale which were generated during the review of literature and from classroom experiences. Each subscale consists of three positively and three negatively worded items thus:
Video clips simulations

(i) Videos create mental images of the topics taught
(ii) Watching videos during lectures is a waste of time

Discussions

(i) Discussion helps me to clarify points discussed during the lecture
(ii) Discussion disrupts the flow of the lecture

Group Work

(i) Group work enhances my academic achievement
(ii) Group work limits my intellectual capability

Role Play

(i) Role play creates excitement during lectures
(ii) Role play is just a form of entertainment

Game Show

(i) Game show makes the lecture lively and interesting
(ii) No need for the game, too childlike

Five-minute-paper

(i) Five minute paper helps to monitor students’ understanding of the topic discussed
(ii) Five minute paper is like a test

Clarification Pauses

(i) Clarification pauses help in clarifying points that are not clear
(ii) Clarification pauses distort free flow of lectures

All the items were measured by a modified 4-point Likert scale response anchors ranging from strongly agree to strongly disagree with corresponding scores of 4, 3, 2, and 1. All the negative items were reversed during analysis. The items were generated during the review of literature and the initial versions were given to experts for suggestions and comments before coming up with the final version. The reliability of the instrument was ascertained by carrying out pilot studies among the students taking PSYC 2009. The instrument yielded the following Cronbach’s Alpha reliability coefficients as shown in table 1:

<table>
<thead>
<tr>
<th>Sub Scale</th>
<th>Alpha Coefficients</th>
<th>No of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video clips simulations</td>
<td>0.84</td>
<td>6</td>
</tr>
<tr>
<td>Discussions</td>
<td>0.83</td>
<td>6</td>
</tr>
<tr>
<td>Group Work</td>
<td>0.75</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 1. Alpha Reliability Coefficients of Active Learning Strategies with 7 subscales (N = 40)
These alpha reliability coefficients of the 7 subscales ranging from 0.70 to 0.85 indicated that the instrument has a high internal consistency and the validity was ascertained by the choice of items which were subjected to internal consistency analysis (Cronbach’s Alpha), which is an index of item homogeneity and an indication of construct validity.

**Student Learning Outcome Assessment Scale** is the second instrument used to assess SLOs specified for three lectures in the Learning Theory and Practice Course via a 12 “short answer” items covering Gestalt Psychology, Learning Styles and Pavlov’s Classical Conditioning Theory. It is important to define outcomes as clearly and explicitly as possible. The more explicit and overt the statements of learning outcomes are, the easier it will be to measure learning, (Institutional Assessment and Studies (IAS). Thus, the learning outcomes were specific and were stated in measurable terms. To ensure its content and construct validity, the initial versions were given to experts for suggestions and comments before coming up with the final versions as suggested by Student Learning & Outcomes Assessment; University of Rhode Island that it helps to work with one or two people to draft SLOs--incorporating different perspectives; review or edit statements with others in your department and consult resources outside the department.

Thus the final versions of the three SLOs were:

(i) By the end of the lecture, the students should be able to distinguish the six laws of Gestalt Psychologist that govern perception in five minutes without mixing them together.

(ii) By the end of the lecture, the students should be able to describe concisely the three different learning styles as propounded by Wooldridge in two minutes without mixing them together

(iii) By the end of the lecture, the students should have the ability to identify and illustrate the three steps in Pavlov’s classical conditioning theory in six minutes without muddling them up.

Thus, the Student Learning Outcomes Assessment Scale consists of 12 “short answer” items which were generated from the five-minute, two minute and six minute papers scored out of 30 which assessed the three specified learning outcomes. The initial versions were given to experts for suggestions and comments before coming up with the final versions. Thus, the validity of Student Learning Outcome Scale was ascertained by the choice of items which were subjected to internal consistency analysis and the coefficient alpha of 0.72 was obtained which is an index of item homogeneity and an indication of construct validity.

**Procedure**

Informed consent of the students to participate in the survey was obtained during the lectures prior to the administration of the questionnaires. The students were briefed of the purpose of the research and that they were free not to participate in the study if they so wished. Thus out of 189 students, only 158 gave their consent to participate and they responded to the items on both instruments. The remaining 31 students were not included in the research because of their irregularity at lectures. The Active Learning Strategies Scale was administered after eight weeks of exposing the students to the different strategies and the administration lasted for approximately 20 minutes, while the Student Learning Outcomes Scale was administered at the end of three different
lectures. The students were surveyed in their lecture halls with the help of three research assistants who had been groomed in the administration of the instruments. The researchers took time to brief the participants on the process of answering the items in the questionnaires and they were told that it was not for examination purpose but for research and they were also told that the information would remain confidential. To buttress this, the students were told not to write their names or identification numbers on the instruments but they were given codes so as to be able to match their responses to the three versions of learning outcomes assessment scale for collation during analysis. The researchers ensured that all the items in the instruments were properly filled and the questionnaires were collected immediately the participants had finished.

Data Analysis

The data collected were entered into SPSS version 16, Descriptive Statistics, Pearson Product Moment Correlation Coefficient, and Regression Analysis were conducted to analyse the data. All the negative items were reversed during the analysis.

Results

Research Question 1: Were student learning outcomes achieved satisfactorily?

In order to find out whether the objectives of the lectures were actually achieved at the end of each of the three lectures, the learning outcomes were measured, collated and marked out of 30.

<table>
<thead>
<tr>
<th>Student Learning Outcome</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>158</td>
<td>13.00</td>
<td>29.00</td>
<td>20.15</td>
<td>3.28</td>
</tr>
</tbody>
</table>

The result on table 2 indicated that the objectives of the lectures were achieved among this sample with the mean score 20.15; maximum score 29.00 minimum score13.00; 4% scored below average (13 -14 marks), 3% scored average mark (15 marks) while 93 % scored above average( 16 -29 marks). Thus, the student learning outcomes specified for the three lectures were satisfactorily achieved.

Research Question 2: Were the students actively engaged during the PSYC 2009 lectures?

The students were asked to indicate whether they participated in the classroom activities when active learning strategies were incorporated.

<table>
<thead>
<tr>
<th>Class Activities/Learning Strategies</th>
<th>Yes (Frequency)</th>
<th>Yes (%)</th>
<th>No  (Frequency)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participated in game show</td>
<td>147</td>
<td>93</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Took part in discussions during lectures</td>
<td>151</td>
<td>96</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Role played during lectures</td>
<td>134</td>
<td>85</td>
<td>24</td>
<td>15</td>
</tr>
<tr>
<td>Watched videos during lectures</td>
<td>154</td>
<td>98</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>
Took part in group presentations | 157 | 99 | 1 | 1
Participated in 5 minute paper | 138 | 87 | 20 | 13
Clarified points during lectures | 132 | 84 | 26 | 16
Total | 158 | 100 | 158 | 100

From the findings on table 3, it is evident that the students participated actively in the class activities. Almost all the students took part in the group presentations and majority of them were also involved in other activities.

Research Question 3: Which of the strategies best facilitated active learning among the students?

Table 4: Profile of students’ ratings on strategy that best facilitated active learning.

<table>
<thead>
<tr>
<th>S/N</th>
<th>Items</th>
<th>SD</th>
<th>D</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Group work facilitates active Learning</td>
<td>2</td>
<td>1</td>
<td>24</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>82</td>
<td>52</td>
<td>50</td>
<td>32</td>
</tr>
<tr>
<td>2</td>
<td>Role Play promotes Student engagement during lectures</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>93</td>
<td>59</td>
<td>57</td>
<td>36</td>
</tr>
<tr>
<td>3</td>
<td>Five-minute-paper ensures students’ participation in lectures</td>
<td>3</td>
<td>2</td>
<td>26</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>96</td>
<td>61</td>
<td>33</td>
<td>21</td>
</tr>
<tr>
<td>4</td>
<td>Videos promote active learning during lectures</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>80</td>
<td>51</td>
<td>74</td>
<td>47</td>
</tr>
<tr>
<td>5</td>
<td>Clarification pauses foster active listening during lectures</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>103</td>
<td>65</td>
<td>44</td>
<td>28</td>
</tr>
<tr>
<td>6</td>
<td>Game show enhances active learning in this course</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>81</td>
<td>51</td>
<td>73</td>
<td>46</td>
</tr>
<tr>
<td>7</td>
<td>Discussion promotes active learning lectures</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>90</td>
<td>57</td>
<td>66</td>
<td>42</td>
</tr>
</tbody>
</table>

Figure 1: Active Learning Strategy that Best Facilitates Active Learning
The results displayed on table 4 and figure 1 revealed that video clips simulations top the list with 98% of the students agreeing that it promotes active learning, while discussion and game show occupied the 2nd position with 97%, role play was fourth with 95%, clarification pauses was fifth 96%, group work was sixth 84% and lastly five minute paper with 82%. Nevertheless all the strategies seemed to promote active learning as revealed by the students’ responses that they promote learning.

**Research Question 4**: Will there be significant relationships between the active learning strategies (video, discussion, game show, clarification pauses, role play, five-minute-paper, group work,) and the student learning outcomes?

<p>| Table 5: Correlations between Active Learning Strategies and Student Learning Outcomes. |</p>
<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Learning Outcomes</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Discussion</td>
<td>.339**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Group Work</td>
<td>.182*</td>
<td>.319**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Role - Play</td>
<td>.223**</td>
<td>.481**</td>
<td>.344**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Video</td>
<td>.340**</td>
<td>.548**</td>
<td>.313**</td>
<td>.547**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Game show</td>
<td>.236**</td>
<td>.486**</td>
<td>.386**</td>
<td>.675**</td>
<td>.597**</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Five Minute Paper</td>
<td>.238**</td>
<td>.294**</td>
<td>.152</td>
<td>.465**</td>
<td>.356**</td>
<td>.294**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>8 Clarification Pauses</td>
<td>.302**</td>
<td>.428**</td>
<td>.202*</td>
<td>.406**</td>
<td>.656**</td>
<td>.492**</td>
<td>.397**</td>
<td>-</td>
</tr>
</tbody>
</table>

The findings displayed on table 5 revealed the statistically significant positive correlations between students’ learning outcomes and active learning strategies indicating that the strategies are important in achieving learning outcomes. The significant positive interrelationships among the learning strategies suggested that they are interwoven. Thus, as students watch the video clips, they discuss, ask and answer questions, make clarifications etc.

**Research Question 5**: Will the active learning strategies predict student learning outcomes?

<p>| Table 6: Multiple Regression table showing active learning strategies as predictors of Student Learning Outcomes. |</p>
<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE (b)</th>
<th>β</th>
<th>t</th>
<th>Sig.(P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Learning Strategies</td>
<td>9.53</td>
<td>.019</td>
<td>.373</td>
<td>5.02</td>
<td>.001</td>
</tr>
</tbody>
</table>

Rsq = 0.139; *Sig p< .001

F(1,150) = 25.23,*Sig p < .001

**Note**: SE (b) (unstandardised coefficients showing the predicted increase in the value of the criterion variable)

β (the standardized beta coefficients, gives a measure of the contribution of each variable to the model)
t (gives a rough indication of the impact of each predictor variable, the bigger the t value, the larger the impact of the predictor variable on the criterion variable).

R-sq the square of the measure of correlation and an indication that the model is fit for future prediction of learning outcomes among the university students.

The result of the regression analysis on table 6 revealed that the active learning strategies significantly accounted for 14% ($R^{2} = 0.139$); ($F (1,156) = 25.23, p < .05$) of the variance in student learning outcomes. Therefore, active learning strategies significantly predicted student learning outcomes among some UWI psychology undergraduate students in Barbados.

**Discussions**

This study investigated the relationships between active learning strategies and student learning outcomes. The first major finding was that the students were actively involved in the PSYC 2009 lectures. These psychology students were always engaged during the lectures, got involved in discussions, asked and answered questions, role-played, engaged in video clips simulations, clarifications, 5 minute paper, group work and game shows and additionally thought about the things they did. Thus, they understood the tenets of the various learning theories discussed during the lectures and therefore developed deep understanding of the important ideas learnt. It is not surprising therefore to see that the majority of the students reported that they were actively involved in the lectures when the strategies were incorporated and the PowerPoint presentation was used as the tool. These findings corroborated the earlier reports by Bonwell and Eison, (1992) and that of Mantyla, (1999) that active learning strategies facilitates greater emphasis on students’ exploration of their own meaning, attitudes and values and therefore developed deep understanding of the important ideas learnt as reported by Wiggins and McTighe, (1998). This finding also amplified Bonwell and Eison (1991) assertion that from a preference perspective, students generally prefer strategies promoting active learning to traditional lectures and that many strategies promoting active learning are comparable to lectures in promoting the mastery of the content but superior to lectures in promoting the development of students’ skills in thinking and writing (Harasim, et al, 1997).

The second major outcome of this study was that video clips simulations emerged as the best active learning strategy. Thus, the inclusion of this multiple media fosters the development of an emotional connection and enhanced the satisfaction of the participants with the learning activity. Thus, it may not be surprising that the sample of this study reported that the video simulations best facilitated active learning the purpose of which was to provide them with practical experiences which were applicable to real world situation. This is in consonance with Mantyla, (1999) assertion that a good active learning strategy should have a clear purpose or objective and have a feedback mechanism. Suffice to say therefore that the exposure of the participants to video clips simulation afforded them the opportunity to imitate and recreate the concepts thoughts which aided their learning. This lends credence to Chickering and Gamson (1987) suggestion that for students to be actively engaged, they must do more than just listen: they must read, write, discuss, or be engaged in problem solving, higher-order thinking tasks as analysis, synthesis, and evaluation. The sample of this study was able to interact with the learning materials which also cater for the different learning styles; auditory, visual as well as kinaesthetic.

Interestingly, the result on table 2 revealed that almost all the students participated in group work yet it occupied the sixth position in the student ratings in table 3. A probable reason for this may be due to the fact that the sample of this study participated in group work for their
presentations for grading but they would have preferred to work individually because of the uncooperative attitudes of their group members which actually affected their ratings in table 3.

Another major finding of this study was that the active learning strategies significantly correlated with SLOs. These significant positive correlations between active learning strategies and SLOs indicated that effective learning depends on the students’ active involvement in the lecture. In the present study, the SLOs specified in measurable terms what students will know in PSYC 2009 course, be able to do or be able to demonstrate at the end of the lecture as earlier suggested by Kennedy (2006). Thus, at the end of each of the three lectures these learning outcomes were measured, collated and marked out of 30 to find out whether the objectives of the lectures had actually been achieved. The result on table 2 indicated that the objectives of the lectures were achieved satisfactorily among this sample. This is expected because the learning strategies were utilised throughout the lecture periods and the sample of this study were actively involved in lectures from the beginning to the end therefore they were able to acquire the necessary knowledge and skills through discussions, group work, role plays, video - clip simulations, etc. These findings are quite consistent with the extent of literature in this field that the activities must be designed around important learning outcomes and promote thoughtful engagement on the part of the student (Wiggins & McTighe 1998); should encourage students to think about what they are learning and that adopting instructional practices that engage students in the learning process is the defining feature of active learning (Ruhl, Hughes, and Schloss, 1987).

The final outcome of this study was that the active learning strategies predicted the SLOs among this sample, they significantly accounted for 14% ($R^2 = 0.139$); ($F (1,156) = 25.23$, $p < .05$) of the variance in SLOs. The reason being that active learning strategies were achievement-oriented when compared with traditional lecture method, therefore the active learning strategies are important in achieving the SLOs. These findings also corroborated the earlier findings by Astin (1995) that active learning accommodates a variety of learning styles, promotes student achievement, enhances learner motivation, changes student attitudes, and basically, causes learners to learn more; that many strategies promoting active learning are comparable to lectures in promoting the mastery of content but superior to lectures in promoting the development of students' skills in thinking and writing (Harasim, et al, 1997) and that cooperation promotes higher quality individual problem solving than does competition, individuals in cooperative groups produced better solutions to problems than individuals working in competitive environments (Qin, Johnson, and Johnson 1995).

**Conclusion**

The results reported in this study underscore the need for faculty, secondary school teachers and all the people interested in solving the problem of underachievement and promoting learning in institutions of learning to incorporate active learning strategies into their classroom practices and to use the seven active learning strategies (video clips simulation, discussion, game show, role – play, group work, clarification pauses, one/five minute paper) as predictor set in studying cognitive outcomes in their classroom practices for achievable learning outcomes. The findings of this study also provided an interesting theoretical link with the prior investigators and learning theorists like Skinner who demonstrated in his operant conditioning theory that the learner is expected to be active, functional and also operate on his environment for effective learning to take place. The need to make learners to be active cannot be overemphasised in the changing environment specifically because the emergence of new technologies is changing the society, consequently, the educational systems are facing significant pressure to change the way we educate our children too in order to
adequately prepare them to live, learn, and work in a global, digital age. Education is all about change and creativity, therefore there should be creative models for engagement in learning in a shifting educational landscape of the 21st century.

References

Student Learning Outcomes; Institutional Assessment and Studies (IAS), University of Virginia retrieved from http://www.web.virginia.edu/institutional/iaas/assess/resources/learningoutcomes.shtml
Elementary School Science Teachers’ Understanding About the Concept of the Earth’s Rotation

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Abstract

The teaching of science in elementary/primary schools is problematic in many different countries because pre-service teachers often lack a deep understanding of science content knowledge. In Australia, research and national reports indicate that this lack of science content knowledge decreases the pre-service teachers’ confidence and results in science being one of the most neglected subjects in the primary curriculum (ASTE Committee, 2002; Committee for the Review of Teaching and Teacher Education, 2003; Goodrum, Hackling, & Rennie, 2001). For example, research has shown that science is the least taught subject in Australian primary schools (except for languages other than English) averaging 41 minutes or 2.7% of teaching time each week (Angus, 2004). The same, I believe can be said about the teaching of science in Ghana, and consequently, students’ performance in the subject. A fact file from ‘Ghana Nsem’ a website primarily for information on Ghana and analysis of its past, present and future in the context of Africa and the world indicated that in 2009 there were no science teachers in the Sissala East district of Ghana. The purpose of this study would be to identify elementary/primary school science teachers’ understanding of the concept of the earth’s rotation bringing about day and night, and consequently, its impact on their students’ understanding of the concept.

Keywords: elementary school teachers, concepts, misconceptions, rotation of the earth, basic school pupils.

Introduction

Concepts can be considered as ideas, objects or events that help us understand the world around us (Eggen and Kauchak, 2004). Misconceptions, on the other hand can be described as ideas that provide an incorrect understanding of such ideas, objects or events that are constructed based on a person’s experience (Martin, Sexton and Gerlovich, 2002).

Science is an important part of the core curriculum. It is a fascinating but difficult subject and requires a depth of knowledge and understanding in order to be taught well. Thus, primary education science teachers have an important role in their students’ understanding of science concepts. Primary school teachers, who do not possess a science certificate or degree, often find themselves teaching science topics which they have not been taught themselves. Unfortunately, science in the hands of a non-specialist, can lead to errors in teaching. The consequence of inadequate science teaching in primary schools is that some children develop a negative attitude and lack of knowledge about the subject.

Research has long documented that people of all ages – elementary school children, college students, and adults – cannot explain the cause of day and night or seasons. While the prevalence of these ideas, as well as the complexity of the subject, makes it unlikely that students will leave elementary school with a complete and correct understanding, it is important to assess, target, and challenge these ideas even in the early years.
This study seeks to find the scientific knowledge of teachers teaching science in selected basic schools in Winneba, and also their understanding of the concept of the earth’s rotation bringing about day and night. The effect of teachers’ understanding of the concept on pupils’ understanding would also be investigated.

**Statement of the Problem**

There has been ongoing discussion about the knowledge that elementary science teachers need in order to teach effectively. A report by the Royal Society (the UK’s national academy of science); indicates that the majority of England’s primary schools do not have the science specialist teachers needed to provide a high quality science education. Professor John Pethica FRS, Vice-President of the Royal Society, said: “Early education is a particularly formative time for young people, when they can either be inspired by the way that science helps them to understand the world around them, or switched off from exploring it. The above statements go a long way to buttress the fact that elementary science teachers play a major role in the scientific journey of any individual. Early experiences in science help children develop problem-solving skills and motivate them toward a lifelong interest in the natural world.”

Research being carried out in the last decade has focused on the role of the primary teacher in science. Many findings, (Harlen, Holroyd, and Byrne, 1995) have pointed towards problems linked to primary teachers’ lack of confidence in teaching science and their limited scientific knowledge background. The elementary science teacher needs an extensive knowledge on the subject to be able to teach it as expected, but the issue at stake is that, most of the teachers teaching science at the elementary schools have not been specifically trained to teach the subject. Bethel, 1984, Heikkinen, 1988; Schoon and Boone, 1998, have all reported that the overwhelming majority of elementary science teachers have limited formal science knowledge. For instance, many elementary school teachers have had negative experiences in science during their own schooling, so in their secondary and tertiary study they have tended to avoid the sciences (Skamp, 1997). However, a vast majority of them find themselves teaching science because of the shortage of specialized science teachers at the elementary level.

Teachers with limited science content have low confidence in teaching the subject, tend to use teaching strategies normally associated with other subjects rather than those more compatible with science and also present a lot of wrong ideas and scientific concepts to their pupils (Abell & Roth, 1992; Australian Foundation for Science, 1991, Department of Education, Employment and Training, 1988; Harlen, 1997).

Teaching elementary school pupils the concept of the earth’s rotation requires that teachers at that level possess certain scientific knowledge and techniques which would make understanding of the concept clear to the pupils and also easy for them to grasp.

**Purpose of the Study**

The purposes of the study are to:

- Investigate elementary science teachers’ understanding of the concept of the earth’s rotation in basic schools in Winneba.
- Examine the effects of the elementary science teachers’ understanding of the concept of the earth’s rotation on pupils’ understanding of the concept in basic schools in Winneba.
Research Questions

The following questions were formulated to guide the study.

1. To what extent do elementary science teachers teaching science in basic schools in Winneba understand the concept of rotations of the earth?
2. What is the effect of the elementary science teachers’ understanding of the concept of the earth’s rotation on pupils’ understanding of the concept?

Significance of the Study

The findings of the study will benefit the Ghana Education Service, science teacher education institutions, textbook writers and teachers in general.

The Ghana Education Service will become aware of the problems caused by posting non-science teachers to basic schools to teach science. It will allow the service to be meticulous in sending teachers to basic schools to teach science.

Science Teacher Education Institutions (Teacher Training Colleges of Education and Universities of Education) will realize the need to equip their students with the requisite curriculum and professional competencies needed to effectively teach science at the elementary level.

Science teachers, lecturers and other personnel with scientific backgrounds contracted by the government to write science textbooks will realize the negative effect wrong concepts from textbooks have on both pupils and teachers, thus they will research more into subject matter before putting them in textbooks.

Last but not least, his study will give elementary science teachers an insight into how their understanding of scientific concepts affect their pupils, and as such see the need to present correct scientific concepts to them.

Literature Review

Teachers’ subject matter content knowledge affect their way of teaching, planning, questioning, and constructing activities, facilitating students’ understanding and the like (Osborne & Simon, 1996; Schulman, 1986).

There has been a lot of research into pre-service elementary science teachers’ understanding of scientific concepts on the earth’s rotation. One of such researchers is Bayraktar (2009).

Bayraktar (2009) conducted studies into pre-service elementary science teachers’ ideas about the causes of lunar phases and revealed that many of them held misconceptions. For example, some student-teachers believed that the shape of the moon was related to the area of it which was not covered by clouds. Some believed that an observer’s location on the earth determines the shape of the moon and also, moon phases could be observed at any time no matter what relative positions the moon, the earth and the sun are located. Trumper (2001, a) studied understanding of basic astronomical concepts of a wide range of students at high school and university level in Israel. The researcher concluded that from junior high school through university, students have particular misconceptions about the moon phases. Results of the study revealed that 19 % of junior high school students, 27 % of pre-service elementary school teachers, 16% of pre-service high school teachers and 25% of non-science major university students believed that the cause of the moon phases is the shadow of earth falling on the moon.

A study conducted by Ameyaw & Sarpong (2011) on The Application of Some Conceptual Approaches in Rectifying Teachers’ Misconceptions on Some Science Topics in the Ga South District
in the Greater-Accra Region of Ghana revealed that out of a total population of forty (40) teachers used for the study about 35% of the participants were of the view that the sun moves gradually from east during the mornings and settle at west in the evenings. Thirty-four (34%) percent of the sampled population expressed their views that “the Sun really moves from one position to another” whiles sixty (60%) percent said the “Sun does not move at all”.

Philosophical arguments as well as common sense support the conviction that teachers’ own subject matter knowledge influences their efforts to help students learn subject matter. Conant (1963) wrote that “if a teacher is largely ignorant or uniformed he can do much harm” (p. 93). When teachers possess inaccurate information or conceive of knowledge in narrow ways, they may pass on these ideas to their students. They may fail to challenge students’ misconceptions; they may use texts uncritically or may alter them inappropriately. Subtly, teachers’ conceptions of knowledge shape their practice--the kinds of questions they ask, the ideas they reinforce and the sorts of tasks they assign.

Methodology

The study population comprised four (4) basic school science teachers selected from ten (10) basic schools located in Winneba in the Effutu Municipal in the Central Region of Ghana. Seven (7) public schools were randomly sampled while three (3) private schools were purposively sampled for the study. The three (3) private schools (St. Paul Methodist Preparatory School, Winneba Uncle Rich Preparatory School, Winneba and H& E Educational Complex, Winneba) were selected because they are well established private schools with adequate teaching staff.

The research instruments used for the study were questionnaires and interviews. A questionnaire consists of a list of questions relating to the aims of the study to which the respondents are required to answer (Nwana, 1990). It is used when one need to quickly and/or easily get lots of information from people in a non-threatening way. It has the advantage of being completed anonymously, relatively inexpensive to administer, being easy to compare and analyze results produced and could be administered to many people. The challenge in using this instrument is that a researcher might not get careful feedback from respondents.

The interview is a kind of conversation: a conversation with a purpose. It is both a flexible and an adaptable way of finding things out. Interviews help when the researcher wants to fully understand respondents’ impressions or experiences, or learn more about their answers to questionnaires. The researcher develops a relationship with respondents and as such full range and in-depth information is obtained. Interviews offer the possibility of modifying one’s line of enquiry, following up interesting responses and investigating underlying motives in a way that postal and self-administered questionnaires cannot (Robson, 1993) therefore enhancing reliability of the data. However, one needs much time to analyze and compare results obtained. It could also be costly.

To grant the instrument face and content validity, the research instruments were given to colleagues and lecturers to go through and check spelling, grammatical and functionality of the instrument. Necessary and constructive corrections and suggestions were made which were taken into consideration.

The questionnaires were distributed to all the teachers involved in the study for them to fill and were collected back immediately. The first part of the questionnaire consisted of the background information of the teachers of which they were to indicate among others their level of science education. The second part aimed at eliciting their ideas and understanding about the earth’s rotation and revolution. They were to show this by differentiating wrong and right concepts
from a list of fifteen (15) concepts provided by either agreeing or disagreeing with the stated concepts.

The researcher also used a similar questionnaire by way of an interview to solicit the pupils’ ideas on selected concepts of the same topic.

Both teachers and pupils were assured of confidentiality and anonymity.

Data Analysis

SPSS version 17 was used to analyse data collected. Descriptive statistics like frequencies and percentages as well as narrative summaries were used to describe the research questions.

Results and Discussion

The results obtained from the study are as follows:

Number of Respondents

A total of one hundred and forty (140) participants made up of forty (40) teachers and one hundred (100) pupils [ten (10) each from the sampled schools] participated in the study.

Level of Science Study of Teachers

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WASSCE/SSSCE</td>
<td>8</td>
<td>20.0</td>
</tr>
<tr>
<td>O/A Level</td>
<td>3</td>
<td>7.5</td>
</tr>
<tr>
<td>Teacher Training College</td>
<td>20</td>
<td>50.0</td>
</tr>
<tr>
<td>University</td>
<td>8</td>
<td>20.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Table 1

Table 1 is an indication that majority of the teachers studied science up to the training college level only. Only a few (20%) further studied science at the university. Some of them only have knowledge on science from the secondary school (WASSCE /SSSCE and O/A Level).

Do Teachers Enjoy Teaching Science?

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>16</td>
<td>40.0</td>
</tr>
<tr>
<td>No</td>
<td>23</td>
<td>57.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Table 2

Majority (57.5%) of respondents claim they do not enjoy the teaching of the subject. Only 40% enjoy the work they do. The implication from the table is that most of the teachers teaching science
at the elementary level do it out of pure job responsibility and not as something they love doing and so may not teach with any zeal or passion to attain results.

**Level of agreement with ideas on concept of the earth’s rotation**

<table>
<thead>
<tr>
<th>Concept</th>
<th>Agree</th>
<th>Disagree</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The sun is larger than the Earth</td>
<td>33</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>2. The sun rises exactly in the east and sets exactly in the west every day.</td>
<td>37</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>3. The sun is always directly overhead or directly south at twelve o’clock noon.</td>
<td>29</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>4. The Earth is the center of the solar system and is the largest object in the solar system. All stars are the same distance from the earth.</td>
<td>19</td>
<td>19</td>
<td>2</td>
</tr>
<tr>
<td>5. The moon can only be seen during the night, and its shape always appears the same.</td>
<td>21</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>6. The moon rotates on its axis as it revolves around the earth.</td>
<td>30</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>7. Night occurs when the sun is covered by clouds, moon, or atmosphere.</td>
<td>27</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>8. One side of the moon is always dark</td>
<td>20</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>9. It takes the sun 24 hours (one day) to rotate around the earth.</td>
<td>21</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>10. The Earth spins on its axis.</td>
<td>34</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>11. The earth’s rotation is responsible for day and night.</td>
<td>11</td>
<td>28</td>
<td>1</td>
</tr>
<tr>
<td>12. It takes the Earth one year to complete one revolution.</td>
<td>25</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>13. The amount of time that the sun is visible in the sky changes during the course of a year.</td>
<td>5</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>14. The earth orbits the sun in a period of one day.</td>
<td>29</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>15. The moon does not rotate</td>
<td>30</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

**Table 3**

Table 3 shows how teachers understand some basic ideas on the concept of rotation of the earth. Majority of teachers (92.5%) agreed with the statement that ‘the sun rises exactly in the east and sets exactly in the west’ a concept which is actually incorrect. Another majority (52.5%) think that ‘the moon can only be seen in the night and its shape always appears the same’ which is also incorrect. Furthermore, thirty (30) out of the forty (40) teachers representing 75% agreed that the moon does not rotate, a clear indication that most of the teachers did not understand the concepts of the earth’s rotation.
Level of Pupils’ Understanding of the Concept of Rotation and Revolution

<table>
<thead>
<tr>
<th>Concept</th>
<th>TRUE %</th>
<th>FALSE %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The sun is larger than the Earth</td>
<td>69</td>
<td>31</td>
</tr>
<tr>
<td>2. The sun rises exactly in the east and sets exactly in the west every day.</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>3. The sun is always directly overhead or directly south at twelve o’clock noon.</td>
<td>89</td>
<td>11</td>
</tr>
<tr>
<td>4. The moon can only be seen during the night, and its shape always appears the same.</td>
<td>76</td>
<td>24</td>
</tr>
<tr>
<td>5. The moon rotates on its axis as it revolves around the earth.</td>
<td>81</td>
<td>29</td>
</tr>
<tr>
<td>6. One side of the moon is always dark</td>
<td>90</td>
<td>10</td>
</tr>
<tr>
<td>7. The Earth spins on its axis.</td>
<td>59</td>
<td>41</td>
</tr>
<tr>
<td>8. The moon does not rotate</td>
<td>85</td>
<td>15</td>
</tr>
<tr>
<td>9. The earth orbits the sun in a period of one day.</td>
<td>49</td>
<td>51</td>
</tr>
<tr>
<td>10. Night occurs when the sun is covered by clouds, moon, or atmosphere.</td>
<td>83</td>
<td>17</td>
</tr>
</tbody>
</table>

Table 4

This table shows that in all the given concepts, majority of the pupils could not answer correctly. For instance, all the pupils (100%) thought that ‘the sun rises exactly in the east and sets exactly in the west every day’, ninety percent (90%) answered that ‘one side of the moon is always dark’, eighty-one percent (80%) also answered that ‘the moon rotates on its axis as it revolves around the earth’. Clearly, all these are misconceptions held by pupils on the concept of the earth’s rotation and revolution.

Research Question 1

To what extent do elementary science teachers teaching science in basic schools in Winneba understand the concept of the rotation of the earth?

Majority of the teachers had wrong answers for the second part of the questionnaire. For instance, twenty-seven (27) representing 67.5% of the teachers agreed with a false concept that ‘Night occurs when the sun is covered by clouds, moon, or atmosphere’. Twenty-one (21), that is, 52.5% of science teachers also agreed with a false concept that ‘It takes the sun 24 hours (one day) to rotate around the earth’. For a wrong concept as ‘the moon does not rotate’, a majority of thirty (30) making up 75% of the teachers agreed with it while only four (4) realized it is not true. Six (6) of them were unsure of the right or wrong answer. However, thirty-three (33) which is 82.5% could recognise that ‘the sun is larger than the earth’ and about thirty-four (34), 85% could also correctly agree with the statement that ‘the earth spins on its axis.

These findings clearly indicate that teachers teaching science at the elementary level in schools in Winneba do not actually have a firm grasp on the concept of the earth’s rotation and revolution. They have a lot of misconceptions about the concept. These findings support the view by Bayraktar (2009) who conducted studies into pre-service elementary science teachers’ ideas about the causes of lunar phases and revealed that many of them held misconceptions.

Research Question 2

What is the effect of the elementary science teachers’ understanding of the concept of the earth’s rotation on pupils’ understanding of the concept?
Majority of the pupils held misconceptions which manifested in how they answered the questionnaire. Pupils’ responses generally indicated lack of understanding on the concept of the earth’s rotation. All the pupils (100%) responded that ‘the sun rises exactly in the east and sets exactly in the west every day,’ which is a wrong concept. Eighty-five percent (85%) think that ‘the moon does not rotate’, which is also a wrong concept. Sixty-nine percent (69%) of the pupils were able to realize that ‘the sun is larger than the Earth’ with about thirty-one percent (31%) responding that it is false.

These results show that pupils hold a lot of misconceptions concerning the rotation and revolution of the earth. Some of the reasons given by the pupils through an interview conducted alongside the questionnaire were that ‘that is what my teacher said’, ‘I read it from the notes my teacher gave me’ and ‘that is what I always hear my teacher and other people say’.

The above support the claim by Conant (1963) that “if a teacher is largely ignorant or uniformed he can do much harm” (p. 93). When teachers possess inaccurate information or conceive of knowledge in narrow ways, they may pass on these ideas to their students. They may fail to challenge students’ misconceptions; they may use texts uncritically or may alter them inappropriately.

Thus, pupils’ understanding of the concept of the earth’s rotation is largely influenced by teachers’ own understanding of the concept.

Conclusion

It may be concluded that teachers teaching science at the elementary level do not have the requisite scientific knowledge about the concept of rotation to effectively teach it to the understanding of the pupils. This has led to many pupils having a lot of misconceptions on the concept of the earth’s rotation leading to poor performance in science.

Recommendations/Suggestions

As a result of the findings, the following recommendations/suggestions are made:

1. The Ghana Education Service should ensure that more teacher trainees are admitted into science programs at the Colleges of Education to ensure that the right caliber of science teachers are turned out to teach the subject at the basic level of education.
2. The Ghana Education Service should ensure that each basic school in the country has at least one trained science teacher to avoid the issue of head teachers asking non-science specialized teachers to teach the subject which could result in misconceptions being transferred to the pupils.
3. The Ghana Education Service should constitute a special board which would be in charge of all the textbooks and other teaching materials being used by institutions at all levels of science education to ensure that the correct concepts are written in the teaching and learning materials.
4. Private institutions should be encouraged as much as possible to employ trained teachers to teach science especially and not just anybody without a scientific background, as science is a sensitive subject which requires people with a good knowledge in it to teach.
5. Municipal and District Education Services should ensure that regular in-service trainings are conducted in schools the various Municipal, Districts, circuits and so on to ensure that science teachers are kept abreast with modern issues, knowledge and skills in science in order to impart the right knowledge to pupils learning science.
References


Impact of HIV/AIDS Education Programmes on Sexual Behaviour of Female Students in Nigerian Schools: Policy Implications for Scientific and Technological Development

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Abstract
This study investigated the impact of HIV/AIDS education programmes on sexual behaviors of female students in senior secondary schools in Rivers State of Nigeria. The population for the study comprised of all senior secondary schools female students in Nigeria, which was divided into urban and rural schools. The sample size was 200 female students obtained by using stratified random sampling technique. The instrument used for data collection was a 10-items structured questionnaire titled "Rating Scale for Impact of School HIV/AIDS Programmes on female students sexual behaviors (IHIV/AIDSFSSB) which has a 4-point Likert type response format. The face and content validity was established by the researcher and two experts in health education. Using Pearson product moment correlation coefficient the research instrument had a reliability coefficient of 0.81. Two research questions and one hypothesis guided the study. Mean and standard deviations were used to answer and analyze the research questions while the hypothesis was tested at 0.05 alpha level using Z-tests statistical analysis. The only Null research hypothesis was accepted.

The study found that the school based HIV/AIDS programmes are not adequately implemented in the urban and rural schools and the sexual behaviours of the female students have not positively changed to any significant degree.

Keywords: HIV/AIDS education, sexual behaviour, scientific and technological development.

Introduction
"Education is the most powerful weapon you can use to change the world," and is a basic instrument for eradicating poverty, constructing citizenship and improving people’s ability to control their own future." (Global Campaign for Education (GCE) 2004). The importance of education in the socioeconomic development of Nigeria is recognized by the Federal Government of Nigeria when she stated the objectives for establishing the universal Basic Education (UBE) programme as "provision of education at the primary and junior secondary schools shall be free to every child of school age". (FME, 2001). Education plays a pivotal role in shaping the lives of children and young adults. However, schools can be breeding grounds for potentially damaging behaviours that remain with pupils into adulthood. Conversely schools can prove effective in helping young people learn positive and healthy models of behaviour by challenging the harmful gender norms that limit academic achievement and increase the likelihood of HIV infection. There is a general consensus on the actual and likely impacts of HIV/AIDS epidemic on the education sector. Global Campaign for Education (GCE), (2004) reported that around 700,000 annual case of HIV in young adults could be prevented if all children received a complete primary education and that the economic impact of HIV/AIDS could be greatly reduced. Also Onyido (2010) observed that women face various forms of discriminations because they lag behind in education. Consequently, it is difficult for them to
mobilize themselves to confront all the gender related discriminations against them in all facets of life. According to Education for All (EFA) Global monitoring report (2010) Kelly (2006); HIV/AIDS is a systemic problem for the education sector and hence requires a systemic response. The epidemic affects the supply and demand for primary and secondary schooling especially in countries where there is a high prevalence of HIV. Teachers deaths due to AIDS-related illness are expected to increase rapidly over the next 10 to 15 years. HIV and AIDS are significant obstacles to children achieving universal access to primary education by 2015, with a decline in school enrolment as one of the most visible effects of the epidemic. (UNICEF, 2005). Hence, different strategies and programmes have been implemented in the education sector by international organizations and individual countries to curb the spread of HIV, although not all of these have been systematically documented in Nigeria.

Statement of the Problem

It is obvious that Africa, indeed the world is enveloped in a full HIV/AIDS pandemic. HIV prevalence rates in Africa sub-regions remain by a staggering distance the most advanced in the world. According to epidemiological fact sheets on HIV/AIDS and sexually transmitted infections of UNAIDS (2004);

"The HIV prevalence rate in sub-Saharan Africa is over six times the global estimate. Botswana and Swaziland are plagued by national HIV prevalence rates in excess of 35%. Lesotho, Namibia, South Africa and Zimbabwe all have epidemics with over 20% prevalence rates, while Zambia, Mozambique and Malawi have prevalence rates over 10%.

According to reports of National Committee on AIDS (NACA), over 40 million people in the world are living with HIV/AIDS and one in every twelve of these lives in Nigeria. The potential social and economic consequences of HIV/AIDS in Nigeria are enormous. While HIV prevalence rates in the sub-Saharan region is reaching unprecedented levels, the building and retaining of a pressure group of social capital and a critical mass is imperative. The generational impact of the epidemic offers a critical void for tertiary education institutions to fill by providing an intelligent and coordinated response to stem the tide of the epidemic through research, innovation and “thinking faster than the epidemic”. Therefore, the problem of this study is to determine the impact of HIV/AIDS Education Programmes on the Sexual behaviours of female students in senior secondary schools in Nigeria and its implications for science and technological development in Nigeria.

Purpose of the Study

The purpose of this study is to find out to what extent the many government and Non-governmental school based HIV/AIDS programmes have positively affected the sexual behaviours of female students in senior secondary schools in Nigeria. Specifically, the objective of this study is:

1) What school-based HIV/AIDS programmes are on-going in Senior Secondary Schools in Nigeria
2) Has these programmes impacted positively on the sexual behaviours of the female students?

Research Questions

From the objectives of this study, the following research questions are developed.
1) What school-based HIV/AIDS programmes are on-going in senior secondary schools in Nigeria?
2) To what extent has school-based HIV/AIDS programmes affected the sexual behaviour of female students in senior secondary schools in Nigeria?

Research Hypothesis

From the research questions developed, one Null hypothesis was formulated to guide this study.

1) \( H_0 \): there is no significant impact of school-based HIV/AIDS programmes on female students sexual behaviour.

Methodology

The research design adopted for this study is the survey research design. The population of this study comprises all female students in senior secondary schools in Nigeria. The sample for this study was obtained using purposive sampling technique to choose Rivers State only because Rivers State is one of the Niger Delta States of Nigeria with a high number of multi National Oil Corporation, large number of emigrants and a high incidence of HIV rate. Then the female students were stratified into urban and rural according to their school location. Form each stratum 100 female students were sampled to give a total sample size of 200 female students.

The instrument used to collect data for this study was a 10-item structured. Questionnaire developed by the researchers and named “Rating Scale for Impact of School HIV/AIDS programmes on female students sexual behaviour”. (IHIV/AIDSFSSB) the questionnaire consists of ten questions structured along the 4-point likert-type rating scale as follows: Strongly Agreed (SA) = 4 points, Agreed (A) = 3 points, Disagreed (D) = 2 points and strongly Disagreed (SD) = 1 point. The questionnaire was assessed by three lecturers, one lecturer in health education and two lecturers in measurement and evaluation for face and content validity the final version of the instrument after validation was used for this study.

The reliability of this research instrument was determined using Pearson product moment correlation method with a different sample group not involved in this research. A reliability coefficient of 0.81 was obtained. The instrument for data collection was administered by the researchers to the sampled female students and the questionnaires retrieved immediately after completion.

Data Analysis

Data generated from this study was analyzed using mean, standard deviation and z-test. A standard reference mean of 2.50 was adopted for the purpose of decision making on the variables associated with the research questions. The Null hypothesis was tested using z-test at 5% level of significance where the corresponding degree of freedom is at infinity i.e. for sample size greater than 30.

Results and Discussion

The results obtained from testing the research questions and hypothesis reveals the following:

Research Question One (RQ1): What school-based HIV/AIDS programmes are on–going in Rivers State?
Table 1: Mean rating of school based HIV/AIDS programme.

| Statements                                                                 | Urban | Rural |  |
|----------------------------------------------------------------------------|-------|-------|--|-----------------|-----------------|-----------------|
| N                           | Mean  | Std. dev. | N | Mean  | Std. dev. | N | Mean  | Std. dev. |
| 1. Anti-HIV/AIDS clubs exist in our school curriculum.                    | 100   | 2.45   | 0.67 | 100   | 2.11   | 0.57 |
| 2. HIV/AIDS lessons are part of our school curriculum                      | 100   | 2.35   | 0.68 | 100   | 2.26   | 0.57 |
| 3. HIV/AIDS lectures by Non-governmental organizations (NGO) hold regularly in our school | 100   | 2.35   | 0.68 | 100   | 2.10   | 0.65 |
| 4. Govt. Sponsored HIV/AIDS lectures hold regularly in our school         | 100   | 2.27   | 0.66 | 100   | 2.07   | 0.52 |
| 5. School-Guidance-counselors hold HIV/AIDS talks regularly.              | 100   | 2.44   | 0.67 | 100   | 2.34   | 0.68 |

Standard reference mean = 2.50

Research Question Two (RQ2): To what extent has school based HIV/AIDS programmes affected the sexual behaviour of female students. In Rivers State.

Table 2: Mean Ratings of Sexual behaviour of Female Students

| Statements                                                                 | Urban | Rural |  |
|----------------------------------------------------------------------------|-------|-------|--|-----------------|-----------------|-----------------|
| N                           | Mean  | Std. dev. | N | Mean  | Std. dev. | N | Mean  | Std. dev. |
| 6. Many female students have decided to delay sex until marriage           | 100   | 2.44   | 0.67 | 100   | 2.10   | 0.56 |
| 7. Many female students now insist on their male sex partners using condom.| 100   | 2.44   | 0.79 | 100   | 2.34   | 0.65 |
| 8. Female students have now reduced the urge to have multiple male sex partners. | 100   | 2.37   | 0.68 | 100   | 2.65   | 0.78 |
| 9. Female students now willingly go for HIV test.                         | 100   | 3.73   | 0.75 | 100   | 2.60   | 0.81 |
| 10. Female students do not allow themselves pressured into having unprotected sex by their male counterparts. | 100   | 2.67   | 0.88 | 100   | 3.26   | 0.89 |

Hypothesis Testing

H₀: There is no significant impact of school HIV/AIDS programmes on the female students sexual behaviour in Rivers State.

Table 3: Z-test on the mean responses of Urban and Rural Female Students on the impact of school HIV/AIDS programmes on their sexual behaviour.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Z-Value</th>
<th>DF</th>
<th>Z critical</th>
<th>decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>100</td>
<td>11.30</td>
<td>3.08</td>
<td>0.48</td>
<td>198</td>
<td>1.96</td>
<td>H₀ Accepted</td>
</tr>
<tr>
<td>Rural</td>
<td>100</td>
<td>11.13</td>
<td>3.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This study made the following findings from the results of the analysis of the data collected through the use of mean, standard deviation and z – test.

~ 103 ~
1. Urban schools appear to have more on-going school-based HIV/AIDS programmes. In Table 1, the mean rating for the existence of Anti-HIV/AIDS clubs in urban school is 2.45 while for rural school is 2.11. The mean rating for HIV/AIDS lesson as part of the school curriculum is 2.35 for urban schools and 2.26 for Rural schools. In urban schools, HIV/AIDS lectures by NGO_s has a mean rating of 2.86 and 2.10 for rural schools. This means that urban schools attract more attention form NGO_s than rural schools.

2. On what extent school HIV/AIDS programmes has affected the sexual behaviours of female students? Female students in urban schools seem to be more conscious of HIV/AIDS infection and appear to modify their sexual behaviour towards avoiding HIV infection. In the urban schools, mean rating for female students deciding to delay sex until marriage is 2.44 and 2.10 for rural female students. Also, the mean rating for female students insisting on their male partners using condoms is 2.65 which is quite a positive development while for rural schools is 2.34. it is also interesting to observe that in urban schools, the mean rating for female students urge to have multiple sex partners is 2.37 while for rural schools is 2.65. Why this positive development in the rural areas? Is it because of environment, upbrinnging, culture etc? Also it is found that the mean rating for female students willingness to go for HIV test is 3.73 for urban schools and 2.60 for rural schools. This is also a positive development perhaps due to the various school based HIV enlightenment campaigns. Finally it was found that female students in urban schools mean rating for resisting the pressure for unprotected sex is 2.67 and 3.26 for rural schools.

3. On the Z – statistic testing of the hypothesis that there is no significant impact of school HIV/AIDS programmes on the female students sexual behaviour, Table 3 shows the urban female students rating of 11.30 with a standard deviation of 3.08 and the rural female students rating of 11.13 and standard deviation of 3.11. the Z – value calculated is 0.48 and Z – critical is 1.96. Therefore the Null hypothesis is accepted because Z_cal < Z_critical. From the findings above, it is not surprising why Ransome – Kuti (2000) maintains that AIDS in Africa is the greatest social and human catastrophe in history. And its grave implications on economic and political stability are already evident. According to WHO (2007) statistics on regional HIV and AIDS shows that sub-Saharan Africa has 20.5 – 23.6 million Adults and children living with HIV. Based on the above information, we conclude that:

1. In the urban – schools in Rivers State HIV/AIDS lectures by NGO_s hold frequently than in rural schools.
2. Anti - HIV/AIDS clubs exist in urban schools than in rural schools.
3. Rural schools are neglected in school–based HIV/AIDS programmes.
4. There is no statistically significant influence of school-based HIV/IDS programmes on female students sexual behaviour in senior secondary schools in Rivers State.

Implications for scientific and technological development in Nigeria

The Federal Government of Nigeria, since post independence has recognized the importance of science and technology in the development of Nigeria. This made her to articulate an educational policy in 1981 titled the National policy on education, revised 2004, to guide education, specifically science and technology education in Nigeria. In the Section 4 of this policy document, it is stated among others that, secondary school education is expected to be a preparation for.
1. Higher education, and equip students to live effectively in our modern age of science and technology. Now with the HIV/AIDS scourge in the sub-Saharan Africa, the possibility of Nigeria transforming itself into a scientific and technological giant is yet to be seen.

How can Nigeria raise a generation of people who can think for themselves, when in our secondary schools, female students still engage in unprotected sex, and have multiple sex partners with a high incidence of HIV infection?

How can Nigeria produce a generation of students equipped to live effectively in this age of science and technology, when HIV/AIDS programmes and campaign is not carried out and sustained in our secondary schools. United Nation’s Organization stated that HIV/AIDS have the widest–ranging impact on education in Africa with an estimated 33 million people living with the pandemic in 2007.

Therefore, for Nigeria to achieve her millennium development goal and position herself for scientific and technological development, sustained school based HIV/AIDS programmes and campaign must be carried to its peak in Nigerian schools.

Based on the above conclusions, the following recommendations are made.
1. The Federal Ministry of Education staff in-charge of HIV/AIDS should intensify their school-based programmes campaign to every nook and cranny of Nigeria.
2. Non Governmental Organization (NGO) should expand their school HIV/AIDS programmes to the rural schools in Nigeria.
3. All senior secondary schools heads should as a matter of urgency introduce anti- HIV/AIDS clubs and school Guidance- counseling unit to commence HIV/AIDS talks in their school.
4. All senior secondary schools heads should ensure that all students passing through SS1-SS3 take HIV/AIDS lessons as part of the school curriculum.

References

Impact of Corporate Social Responsibility on Consumer Purchase Decision

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Abstract

Gradually, the world is recognizing the role of business ethics and responsibility towards society. Accordingly, there is a shift towards social responsible and ethical behaviour around the world. Corporate Social Responsibility as a declared strategy contributes a sustainable development of a company and prepares it for a global competitive advantage. This research is driven by the fact that there has not been conducted any scientific research about CSR in Georgia in order to determine its influence on consumer purchase behaviour. The scope of the research is confined to identify abilities of the Georgian consumers to support CSR strategy of companies operating in the Georgian market. As the research demonstrated, Georgian consumers choose products mainly on the basis of their quality and price, they are not aware of CSR, do not always consider it while purchasing products, but are increasingly interested in it.

Keywords: Corporate Social Responsibility (CSR), purchase decision, developing country, Georgia.

1. Introduction

Corporate Social Responsibility (CSR) is a buzzword in the early 21st century. Almost every big company has CSR strategy to meet the requirements of customers and the society as a whole. Consumers are demanding that companies implement social responsibility regardless of their size, shape or origin. Since societies around the world are facing various social problems, they expect from the companies to help in solving them using their resources effectively.

Advocates of CSR consider it as a vehicle for development, and state that in an increasingly globalized economy competition has become more fierce and traditional differential factors among firms are on the verge of obsolescence, therefore, successful firms will be those that are able to respond to the demands of their stakeholders whatever these demands might be (Doane, 2005; Hollender, 2004; Idemudia, 2011).

Company focus shifted from just profit maximization towards more important issues of business survival and the satisfaction of social needs. There is the necessity to balance current stakeholder and societal needs with those of the future (Hildebrand et al., 2011). Consequently, many companies attempt to understand and meet requirements both their consumers and all stakeholders. According to Lindgreen et al. (2009: 135), CSR must reach out to many different stakeholders; the organization listens and responds to stakeholders that form part of the organization’s relationships, networks and interactions.

However, debates are still continuing about whether or not companies should adopt and engage in CSR, especially in developing countries. Therefore, this study aimed to determine if companies operating in the Georgian market could achieve a competitive advantage through CSR. The research was interested in answering the core question, whether and how CSR influences on purchase decision of Georgian consumers.
2. Methodology

The research method was exploratory in nature in the sense that there is no previous academic research about consumers’ attitude towards CSR in Georgia to guide this study. The quantitative research method was used. Data were gathered by means of survey. Nonprobability purposive sampling was chosen for this research due to its low costs, flexibility and simplicity. In addition, it allows collection of much information quickly, however, the result cannot be generalized to the whole population. The respondents participating in the research were more or less informed about the corporate social responsibility, and expressed their interest in CSR issues, they all are residents of the capital city of Georgia, have education, job, and access to the Internet. The survey was conducted through self-administrated questionnaires sending by Email. The major benefits of an email survey include the speed of distribution, quick response time, and lower costs. The research results were analysed using MS Excel 2011, and statistic software SPSS 15.0 for Windows.

3. Consumer Preferences when Purchasing Products: Case of Georgia

The respondents were asked to name on 5-point scale, what is the most important for them when buying products.

According to the research, product quality has the greatest importance, for the majority of respondents, when purchasing products. The second most important factor is the product price. This result confirms the study result of Arli and Lesmono (2010) that in developing countries consumers choice products by its price and quality. However, their study in Indonesia showed that the most critical factor is price while our study in Tbilisi demonstrated that product quality is an essential determinant when consumers purchasing product, and price comes into question only after the product quality is satisfactory.

The research findings suggest, that for consumers, both for men and women, the most important factor when buying products is quality and then price followed by company reputation, company origin (made in), and finally, social responsibility of a company (see chart 1).

For 86% of respondents, the most important factor for purchasing products is the quality. 25% of respondents named the quality also important, and only 3% said it is of less importance factor.

Product Price is of the greatest importance for 15% of respondents, and important for 53% of respondents. However, 21% of them has a neutral attitude towards it. Only 7% said the price is of unimportant. Company image or reputation is the most important for 11% of respondents, and important for 10% of them, whereas it is of less important for 35% and unimportant for 14% of respondents. The respondents considered the origin of a production company also less important factor when purchasing products. For only 5% of respondents is the origin of company (Made in) the most important and important for 17% of them, while 13% of respondents regard it as unimportant and 29% as less important.

The last important factor for consumers in Georgia is the CSR of company while purchasing products. It is the most important for 7% of respondents and 4% of important, whereas it is of less importance for 27% and unimportant for 54%.
Yet ethical behaviour of the production company is more important for men respondents when buying products, and they take into account more often the production company’s social responsibility than women (see chart 2).

65% of women and 72% men consider product quality as the most important factor when purchasing products. Product price is the most important for 13% of women and 18% of men, whereas 22% of women and 18% of men are indifferent about it.

Company reputation is considered as the most important factor for 11% of women and 11% of men while 30% of women and 32% of men are indifferent about it. A significant amount of women respondents (41%) and 24% of men think that company reputation is of less important when purchasing products.

According to the research, product origin or Made in is unimportant factor for 16% of women and 8% of men. Only 19% of woman respondents and 13% of men regard product origin as important factor when buying products.

Corporate Social Responsibility is less important for woman respondents than men. 54% of women and 53% of men think it is unimportant factor, and it is of less important for 24% of women and 32% of men. CSR is important for 8% of women and 5% of men. However, 11% of women and 5% of men are indifferent about CSR of a company when purchasing products.
Thus, the research showed that respondents pay less attention on social responsibility of the production company when buying products. CSR is not a key criteria for purchase products.

4. Impact of CSR on Purchase Decision of Georgian Consumers

In order to determine how CSR can impact on purchase decision on consumers in Georgia, respondents were asked to note on the 5-point scale, how much they agree with the statements regarding CSR and product purchasing decision.

According to the survey results, the majority of respondents state that they take into consideration an ethic reputation of the production company when purchasing products. Moreover, many of them agree with the statement that they do not buy products from the companies that pursuing unethical or irresponsible behaviour. Half of the respondents state that if price and quality of products are similar, they buy products of the company that implements CSR programs. Many respondents note that they would pay more for products of the company that takes care of the whole society (see chart 3).

15% of respondents absolutely agree and 13% of them agree with the statement that they would pay more in products produced by a company with the CSR programs. However, a big majority (39%) are indifferent and neither agrees nor disagrees with it.
According to the research results, Georgian consumers take into consideration a company’s ethical behaviour when buying products. 18% of respondents absolutely agrees and 34% agrees with the statement: “When I buy something I take into account a company’s ethical reputation”. Whereas 19% of them has indifferent attitudes, and 24% disagrees with the statement.

However, 35% of respondents absolutely agrees and 18% agrees that they do not buy products from unethical and irresponsible companies, while only 21% of them disagree with it.

Moreover, 25% of respondents absolutely agree and 23% agree that they would pay more for products of companies that take care of the whole society. But a significant number of them (27%) is indifferent about it, and 11% disagrees to this statement.

As the research result demonstrated, the majority of respondents (50%) absolutely agrees and 18% of them agree with the statement that they choose the products of those companies that have CSR when price and quality are the same. Only 14% are indifferent about this statement, and a small amount of respondents disagrees to it.

Furthermore, the most respondents agree with the statement that they would pay more for the products of the company that implements CSR. Similar to the research of the Arli and Lasmono (2010), consumers in Georgia also tend to buy products of those companies that implement CSR if price and quality of products are similar. Hence, CSR can be a good strategy for those companies that are operating in a competitive environment. But, according to Arli and Lasmono (2010), if a competitor company would offer lesser price, CSR cannot be an attractive strategy any more.
Conclusion

The research aimed at studying the expectation and needs on CSR in Georgia. It ascertained that consumers in Georgia, as in other developing countries, are not demanding CSR, are less informed about it, and hence, less supportive. However, if companies operating in Georgia develop, implement and communicate CSR, can influence on consumers purchase decision positively, gain customer loyalty. Consequently, they can maintain their positions on market, and achieve a long-term success.

However, in case of the same price and quality, consumers choose products from companies that are engaging in CSR activities. Moreover, they are ready to pay more for products which production company takes care of the whole society, and not to buy products from the companies that are pursuing unethical or irresponsible behaviour. In addition, Consumers take into consideration a company’s ethical reputation when purchasing products. Thus, the study result suggests that CSR can be a good strategy for companies operating in a competitive environment.

The research demonstrated that CSR could help companies operating in the Georgian market in product positioning and differentiation as well as achieving competitive advantage through the CSR programs.

Future research will be important to study which activities consider consumers as unethical or irresponsible behaviour, and what should do companies to be considered as having social responsibility. Besides, it is also of a great importance to find an effective communication channels for companies to inform consumers about their CSR programs, and which aspects of CSR are more demanded by consumers in Georgia.

References


Medicinal and Aromatic Crops in Egypt:
A Study in Medical Geography

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Abstract
This paper is interested in the study of geographical distribution of medicinal and aromatic crops in Egypt. It's considered one of the most important untraditional agricultural commodities which can be used as a base for Egyptian national income development. Paper consists of Two main topics. The first one explains the geographical and environmental factors influence on the growth of Medicinal and Aromatic crops like physical and human factors. The second topic explains the geographical distribution of crops in Egypt, either in the Delta Nile, Upper Egypt, or Sinai peninsula. Through three points the first one deals with development of crops production. Egypt is considered as one of the most important producers of aromatic and medicinal crops in the Middle East, because of its suitable environment to cultivate it. The land of Assuit, Minia, Monofia, Fayoum, Bani-Suife Sinai and Behera governorates are considered the main producers for many crops like coriander, cumin, caraway, Bardakoush, anise and other kinds of medicinal crops. The second point is interested in the study of productive governorates map. The third point deals with economics of medicinal and aromatic crops in Egypt especially after The Egyptian government (ministry of agriculture) leave the farmers cultivate their lands as they liked without control, So farmers preferred the crops which acquired more profits to them.

Keywords: Medical geography, Medicinal, Aromatic, Crops, Egypt

1- Introduction

This study uses quantitative, qualitative and statistical analysis in the geographical factors concerned with the Ecology of some crops and their identity. The study also is interested in the study of Geographical distribution of these crops which are concentrated in Sinai, and some Delta places and middle Egypt governorates like Fayoum, Bani-Souafe, Minia and Assuit. The study also uses the production criteria standards to identity the feasibility of cultivating such crops and the possibility of their cultivation expansion. It covers some selective regions in Egypt to study the role of geographical factors in production.

2- Geographical Factors

2.1- The impact of physiographic features

The land of Egypt in General and Sinai peninsula is unique in its natural diversity due to its geographical location at the meeting point of three continents (Asia, Africa, and Europe), the desert and the Mediterranean Sea, and the Rift Valley. Different climatic, phyto-geographic, and zoo-geographic zones converge here, creating great biological multi-diversity (Mendelssohn H,& 1999,
The region served as an important crossroads for international trade from early antiquity, between Mesopotamia and Egypt, and the East (Asia) and West (Europe); this added to the diversity of the materials used as medicines (Lev E., 2002, pp.159).

North Sinai consists of three main districts; the Mediterranean coastal district, the anticlines district, and the inland district (Zahran M.A., 1992, p.424). These districts comprise five main habitats; salt marshes, sand dunes, sand plains, wadis, and gorges. Figure 1.

**Figure 1. North Sinai physiographic features map**

ElFayoum lands are light soils, which is the most convenient for cultivating the aromatic and medical herbs, as fennel, anise, caraway, coriander, black cumin. According to the advancement in the irrigation processes, and the drainage affect the cultivation process which lowered the level of ground water, so it is affect negatively to all crops.

**Figure 2. The most prominent species growing in different habitat types in Sinai Peninsula**

- *A. monosperma*
- *L. shawii*
- *F. Arabica*
- *T. hirsute*
- *T. nilotica*
- *Z. album*
2.2-The impact of Climate Change

Seasonal variations has impact on availability of active principles in medicinal plants. According to principles of Western Herbal Medicine, therapeutic efficacy varies during different times or seasons of the year. The constituent and active principles vary quantitative at different seasons of the year and the majority of plant materials are usually best collected during the dry season, when the herbs are at peak maturity and concentration.

Like all living members of the biosphere, (Crops) are not immune to the effects of climate change. Climate change is causing noticeable effects on the life cycles and distributions of the
world’s vegetation, including wild Crops. Some of them are endemic to geographic regions or ecosystems particularly vulnerable to climate change, which could put them at risk.

Although scientists do not know whether climate change poses a more prominent or immediate threat to MAP species than other threats, it does have the potential to exert increasing pressures upon medicinal and aromatic plant species and populations in the coming years. The possible effects on CROPS may be particularly significant due to their value within traditional systems of medicine and as economically useful plants. The future effects of climate change are largely uncertain, but current evidence suggests that these phenomena are having an impact on CROPS and that there are some potential threats worthy of concern and discussion (Cavaliere C., 2009, p: 44). Some studies have demonstrated that temperature stress can affect the secondary metabolites and other compounds that plants produce, which are usually the basis for their medicinal activity. (Zobayed S.M., 2005; P: 977).

### 2.3-The Impact of Human Activity

Different types of human impacts including urbanization, agriculture, mining and quarrying, over collection, and over cutting of woody species threaten biodiversity of North Sinai. (Ayyad M.A, 2000, p: 265).

**Figure 6.** Most of the threatened species in North Sinai which are mainly growing in Mediterranean coastal district and anticlines district:

- *A. fragrantissima*
- *A. Santolina*
- *A. tortilis*
- *A. stipularis*
- *A. pachyceras*
- *A. hierochuntica*
- *A. sinaica*
- *T. polium*
North Africa has one of the oldest and richest traditions associated with the use of medicinal plants, which are important for the people, especially in rural areas, as in many places they are the only source of medicine available. The demand for medicinal plants is currently increasing in both developed and developing countries for the growing recognition that natural products have fewer or even no side effects. For others it would be their accessibility and affordable costs that would tip the scales. However, overexploitation can also lead to the extinction of some species. An important product is the compilation by all five North African countries—Egypt, Libya, Tunisia, Algeria, and Morocco—of a compendium on medicinal plants with scientific information on the plants and description of their traditional usage, together with an online database (Sonsoles S, 1978 P:1006).

The study of sick people behavior in treatment from diseases which they suffer from is considered as one the interests of the study of medical geography. Many peoples in rural areas prefer the ethnomedicine, and medical pluralism. Through the study in 1995 about Behavioral dimension in the study of Medical Geography, with applied study in the Egyptian village "Toukh Elkhail" Minia, province, the percentage of population sample depends on traditional medicine was 71.2%, over than 95.5 from this percentage used CROPS, like boiled green mint to treat headache, Caraway and anise for diarrhea, Cumin and mint for constipation, and boiled barley for kidney pain, about 12.5% from the sample drink the Guava paper for cough (Elsabawy, M.N., 2004. P:26).

In another study through A survey was conducted by the Information Unit affiliated to the Egyptian Cabinet about the prevalence of use of plants and herbs as medications and revealed that about 23% of peoples in the conducted sample sought for a medical advice at a herbalist's and bought herbs or plants instead of medicines either due to their available costs, or believing to the common concept that Natural means Safe (Kandil, R.A., 2007.). In the Poison Control Center of Ain Shams University Hospitals, a preliminary study was done in the information unit for estimation of number of cases intoxicated by poisonous plants admitted during the period from 2003-2007. The study showed that the number of cases exceeded 120 cases from which many cases admitted to the in patient ward more than 24 hours. The result of this study proved that the magnitude of the
problem of Plant Intoxication - although so critical- is not well studied in Egypt requiring more effort to assess the exact extent of the problem (Qotb I.A., 2008).

2.5-Environmental Hazards

Correlation between diversity and impact of environmental factors has attracted many ecologists. (Cramer M.J,2005,pp:209-218). Species richness, and measurement indices showed significant differences among habitats. Gorges are the most diverse habitats in North Sinai followed by wadis. Plains have intermediate diversity followed by sand dunes. The lowest diversity indices were recorded at salt marsh habitats. Arid conditions with high salinity and poor drainage limit the number of taxa able to survive, and decrease species diversity. In contrary with the hypothesis that species richness decreases with increasing altitude (Acar C., et al., 2004.,PP:477-499)

3-Geographical Distribution in Egypt

3.1- Development of production

There are 342 species of medicinal plants that are wild collected in Egypt. there are 200 species of wild medicinal flora in Egypt, of which only 20 are also under cultivation. The trend of CROPS cultivated area in Egypt was increasing during the period from (1990-2005),with growth rate reached to 2.5% of the average 57.4 thousand feddans.. This development in not only in the cultivated area, but also in the total production value of the aromatic plants in Egypt (thousand L.E.) which increased during the study period. The export value of aromatic plants showed too an increasing trend during the study period with significant annual rate and annual growth rate 9.1% of the average of 111 million L.E. Table 1 show the development of total cultivated and production of CROPS in Egypt (Shabbara H M.&Akila E. T., 3(8): 2007., 748).

Table 1: The development of total cultivated area, total production value and export value of medicinal and Aromatic plants in Egypt through the period from (1990-2005) (1)

<table>
<thead>
<tr>
<th>Years</th>
<th>Total medicinal and aromatic area (thousand Feddans)</th>
<th>Production value (thousand L.E.)</th>
<th>Exports value (million L.E.)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>43.28</td>
<td>150514</td>
<td>44.8</td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>47.23</td>
<td>272531</td>
<td>56.1</td>
<td></td>
</tr>
<tr>
<td>1992</td>
<td>40.18</td>
<td>178755</td>
<td>57.6</td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td>53.41</td>
<td>235784</td>
<td>51.3</td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td>57.40</td>
<td>289168</td>
<td>69.6</td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td>56.00</td>
<td>428068</td>
<td>72.4</td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td>64.21</td>
<td>472548</td>
<td>87.4</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>52.30</td>
<td>438511</td>
<td>74.2</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>68.41</td>
<td>499007</td>
<td>74.8</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>65.13</td>
<td>497702</td>
<td>83.53</td>
<td></td>
</tr>
</tbody>
</table>

(1) Source: data collected and computed from the Ministry of Agriculture and land Reclamation, Economic Affairs Sector, central division for agricultural planning, different issues.

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<table>
<thead>
<tr>
<th>Year</th>
<th>Area (hectares)</th>
<th>Production Value (Egyptian L.E.)</th>
<th>Value (Million US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>52.91</td>
<td>435022</td>
<td>90.8</td>
</tr>
<tr>
<td>2001</td>
<td>55.14</td>
<td>435310</td>
<td>111.34</td>
</tr>
<tr>
<td>2002</td>
<td>62.17</td>
<td>433375</td>
<td>133.86</td>
</tr>
<tr>
<td>2003</td>
<td>64.15</td>
<td>485269</td>
<td>156.4</td>
</tr>
<tr>
<td>2004</td>
<td>66.27</td>
<td>523418</td>
<td>161.6</td>
</tr>
<tr>
<td>2005</td>
<td>70.00</td>
<td>572463</td>
<td>166.7</td>
</tr>
</tbody>
</table>

Average: Area = 57.4 hectares, Production Value = 396715.3 Egyptian L.E., Value = 93.28 Million US$

**Figure 7.** The development of total cultivated area, and total production Value in Egypt through 1990 to 2005

**Figure 8.** Quantity and value of Egyptian aromatic & medicinal plants exports to the world countries through 1990-2005.
3.2- Productive Governorates map

The geographical distribution map of the cultivated areas of CROPS showed that the concentration of these plant cultivation is in the middle and upper Egypt governorates, especially Elfayum, Bani-Souif, Minia, Assuit, and sahara desert. There are some sites in Egyptian eastern, Western desert, and Sinai Peninsula.

Table (2) Cultivated area and the total production for aromatic and medical herbs for Egypt (year 1998)(*)

<table>
<thead>
<tr>
<th>Governorates</th>
<th>Production (Ton)</th>
<th>%</th>
<th>Total Area (Feddan)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexandria</td>
<td>102</td>
<td>0.06</td>
<td>127</td>
<td>0.19</td>
</tr>
<tr>
<td>Behaira</td>
<td>16791</td>
<td>10.15</td>
<td>5540</td>
<td>8.11</td>
</tr>
<tr>
<td>Algharbeya</td>
<td>1057</td>
<td>0.65</td>
<td>406</td>
<td>0.59</td>
</tr>
<tr>
<td>Kafr El sheikh</td>
<td>9</td>
<td>0.005</td>
<td>7</td>
<td>0.01</td>
</tr>
<tr>
<td>Dakahleya</td>
<td>4</td>
<td>0.002</td>
<td>3</td>
<td>0.004</td>
</tr>
<tr>
<td>Sharkeya</td>
<td>113</td>
<td>0.07</td>
<td>137</td>
<td>0.2</td>
</tr>
<tr>
<td>Monofeya</td>
<td>135</td>
<td>0.08</td>
<td>174</td>
<td>0.25</td>
</tr>
<tr>
<td>Kaliobeya</td>
<td>3293</td>
<td>1.99</td>
<td>521</td>
<td>0.76</td>
</tr>
<tr>
<td>Lower Egypt Total</td>
<td>21504</td>
<td>13</td>
<td>6915</td>
<td>10.12</td>
</tr>
<tr>
<td>Giza</td>
<td>3527</td>
<td>2.13</td>
<td>1098</td>
<td>1.61</td>
</tr>
<tr>
<td>Beni Suef</td>
<td>54838</td>
<td>33.16</td>
<td>8928</td>
<td>13.08</td>
</tr>
<tr>
<td>Fayoum</td>
<td>48730</td>
<td>29.46</td>
<td>13581</td>
<td>19.89</td>
</tr>
<tr>
<td>Minia</td>
<td>20749</td>
<td>12.55</td>
<td>22212</td>
<td>32.53</td>
</tr>
<tr>
<td>Middel Egypt</td>
<td>127844</td>
<td>77.3</td>
<td>45819</td>
<td>67.11</td>
</tr>
<tr>
<td>Assiut</td>
<td>9177</td>
<td>5.55</td>
<td>8895</td>
<td>13.03</td>
</tr>
</tbody>
</table>

(*)Source: the central department of agricultural economics – ministry of agriculture.
<table>
<thead>
<tr>
<th>Region</th>
<th>Area</th>
<th>Percentage</th>
<th>Production</th>
<th>Total Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quena</td>
<td>594</td>
<td>0.36</td>
<td>734</td>
<td>1.08</td>
</tr>
<tr>
<td>Aswan</td>
<td>1651</td>
<td>1</td>
<td>2037</td>
<td>2.98</td>
</tr>
<tr>
<td>Upper Egypt</td>
<td>11422</td>
<td>6.91</td>
<td>11666</td>
<td>17.09</td>
</tr>
<tr>
<td>Total Valley Production</td>
<td>160770</td>
<td>97.21</td>
<td>64400</td>
<td>94.32</td>
</tr>
<tr>
<td>New Valley</td>
<td>109</td>
<td>0.7</td>
<td>99</td>
<td>0.14</td>
</tr>
<tr>
<td>Matrouh</td>
<td>2678</td>
<td>1.62</td>
<td>879</td>
<td>1.29</td>
</tr>
<tr>
<td>Nubareya/new lands</td>
<td>1829</td>
<td>1.11</td>
<td>2899</td>
<td>4.25</td>
</tr>
<tr>
<td>Total Outside The Valley</td>
<td>4616</td>
<td>2.79</td>
<td>3877</td>
<td>5.68</td>
</tr>
<tr>
<td>Total</td>
<td>165386</td>
<td>100</td>
<td>68277</td>
<td>100</td>
</tr>
</tbody>
</table>

**Figure 10.** Cultivated area and the total production for aromatic and medical herbs for Egypt(year 1998)

The distribution of geographical cultivated areas of aromatic plants in main producing governorates during the period (1990-1997) compared by the period (1998-2004), it showed the concentration of these plant cultivation was at middle and upper Egypt governorates. And some Delta governorates as shown in table 2 and figure 10.
Table (3) Production of Aromatic Plants in Egyptian productive governorates

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>feddan</td>
<td>%</td>
<td>feddan</td>
<td>%</td>
<td>ton</td>
</tr>
<tr>
<td>Minia</td>
<td>9336.8</td>
<td>92.9</td>
<td>13094</td>
<td>93</td>
<td>9336.8</td>
</tr>
<tr>
<td>Assuit</td>
<td>300.9</td>
<td>3.4</td>
<td>123.9</td>
<td>0.4</td>
<td>300.9</td>
</tr>
<tr>
<td>Bani Souif</td>
<td>342.3</td>
<td>3</td>
<td>407.9</td>
<td>1.5</td>
<td>342.3</td>
</tr>
<tr>
<td>Minia</td>
<td>2143.6</td>
<td>26</td>
<td>3026.6</td>
<td>41.4</td>
<td>1071.8</td>
</tr>
<tr>
<td>Assuit</td>
<td>6028.8</td>
<td>72.8</td>
<td>3760</td>
<td>51.5</td>
<td>3014.4</td>
</tr>
<tr>
<td>Behera</td>
<td>507.9</td>
<td>16.8</td>
<td>483</td>
<td>18.5</td>
<td>507.9</td>
</tr>
<tr>
<td>Monofia</td>
<td>497</td>
<td>16.5</td>
<td>465</td>
<td>17.8</td>
<td>497</td>
</tr>
<tr>
<td>Minia</td>
<td>463</td>
<td>53.3</td>
<td>613</td>
<td>35.2</td>
<td>370.4</td>
</tr>
<tr>
<td>Fayum</td>
<td>349.3</td>
<td>40.2</td>
<td>1099.4</td>
<td>63</td>
<td>279.4</td>
</tr>
</tbody>
</table>

The average cultivated area at Minia governorate was 9336.8 Feddans which represented 92.9% of its average of total cultivated area in Egypt during the period (1990-1997). It increased to 13094 Feddans which represented 93% of its average of total cultivated area in Egypt during the period (1998-2004). The average coriander crop production was 9336.8 tons during the period (1990-1997) and increased to 13094 tons during the period (1998-2004). In addition, the average cultivated area for coriander at Assuit governorate was 300.9 Feddans represented 3.4% of the average of total cultivated areas of coriander in Egypt during the period (1990-1997). And its production average reached to 300.9 tons during the same period. While the average cultivated area for coriander at this governorate was 123.9 Feddans represented 0.4% of the average of total cultivated areas of coriander in Egypt during the period (1998-2004). And its production average reached to 123.9 tons during the same period. At Bani-souif governorate, the cultivated area with coriander was 342.3 Feddans represented 3% of the average of total cultivated area of coriander in Egypt during the period (1990-1997). It increased to 407.9 Feddans during the period (1998-2004) represented 1.5% of the average of its total cultivated areas in Egypt. Furthermore, the coriander production average was 342.3 tons during (1990-1997), on the other side, it increased to reach 407.9 during (1998-2004).

While for cumin crop at Assuit and Minia governorates, its average cultivated area at Assuit was 6028.8 Feddans which represented 72.8% of its average cultivated area in Egypt during the studied period (1990-1997). It was decreased to 3760 represented 51.5% of its average cultivated area in Egypt during the study period (1998-2004). The cumin production was from 3014.4 to 1880 tons during (1990-1997) and (1998-2004) respectively. In addition, the cumin crop cultivated area at Minia governorate reached 2143.6 Feddans represented 26% of the total average of its cultivated area in Egypt during the study period (1990-1997), its registered increase reached 3026.6 Feddans represented 41.4% of the average of total of its cultivated area in Egypt during the study period (1998-2004). The average production was 1071.8 tons during the period (1990-1997) and increased to 1513.3 tons during the period (1998-2004). Comparing that with caraway crop, it was seen that its cultivated area was concentrated at Monofia and Behera governorates, where, its average cultivated area was 507.9 Feddans at Behera represented 16.8% of the total cultivated area in Egypt for the study period (1990-1997), whereas, it decreased to 483 Feddans, represented 18.5% of the...
total cultivated area in Egypt for the study period (1998-2004). Its average production was 507.9 tons during the period (1990-1997) and decreased to 483.3 tons during the period (1998-2004). Along with that, Caraway cultivated area reached 497 Feddans at Monofia governorate, represented 16.5% of the average of the total cultivated area in Egypt for the period (1990-1997) and decreased to 465 Feddans, represented 17.8% of the average of the total cultivated area in Egypt for the period (1998-2004). Its average production was 497 and 465 tons for the first and second studied periods respectively. As for anise crop, its cultivated areas were concentrated at Minia and Fayum governorates. In Minia governorate, its cultivated area was 463 Feddan, equivalent to 53.3% of the average of the total cultivated area in Egypt, during the studied period (1990-1997) and increased to 613 Feddan, equivalent to 35.2% of the average of the total of cultivated area in Egypt, for the period (1998-2004). While its average production in the governorate was 370.4 and 490.4 tons for the first and second studies periods, respectively. At the same time, Anise crop cultivated area at Fayum governorate was 349.3 Feddan represented 40.2% of the average of its total cultivated area in Egypt for the period (1990-1997) and increased to 1099.4 feddans, represented 63% of the average of its total cultivated area in Egypt for the period (1998-2004). Its production in the governorate was 279.44 and 879.52 tons for the first and second studied periods, respectively (Shabbara H M., 2007.P: 750).

Figure 11. Production of Aromatic Plants in Egyptian governorates through 1990 -2005.
3.3 Economics of medicinal and aromatic plants

According to the economic changes that the world goes through, nowadays and the moving to the international markets and the competition that depends upon the quality of the product and its compatibility with the required specifications. This made the producers able to prefer the crops and products which acquire a wide competition, effectively. Knowing the international market wants makes it easier to cope with the international trade. It is very important to study those crops.

The Egyptian government (ministry of agriculture) in the few last years, leave the farmers cultivate their lands as they liked without control, So farmers preferred the crops which acquired more profits to them. Many of farmers have been switching to the cultivation of medicinal and aromatic herbs. And there is a significant rise in the levels of their products, without the government policy, which reached to the highest levels of development. It was a good reason to study the production of medicinal and aromatic herbs in many lands in the upper Egypt, to show the biggest production per feddan, the production cost per feddan, the net profit, and the exports of these crops.

Some Sinia population from Bedouin, exerts planting of the opium poppy (Papaver somniferum) which is exclusively a domesticated annual plant. It is found today only in association with people, either in planted fields or in disturbed environments near cultivated areas. No wild progenitor of the plant is known, and firm evidence of the plant's origins is elusive. Most biogeographers regard Asia Minor or the adjacent Balkan region as the area in which the poppy was first domesticated for human use, perhaps early in the fourth millennium B.C.E. The cultigen probably spread eastward quickly. The Sumerians, who called it the “joy plant,” grew it in Mesopotamia by 3400 B.C.E. (Simpson and Conner-Ogorzaly 1986, 391). They probably infused the capsules - the seed pods, also called poppy heads or bulbs - and stalks in water, mead, or wine to produce the potent analgesic tea the ancient Greeks called meconium (Husain and Sharma 1983). The earliest certain descriptions of the use of its latex - the thickened juice or sap collected by lancing unripe capsules - date to the fifth century B.C.E., when the physician and geographer Hippocrates discussed its medicinal uses in Anatolia. His Bronze Age culture anthropomorphized the poppy, dedicating it to the god of dreams (Hobbs J.J., 1998).

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ICT as a Viable Tool for Entrepreneurship Education

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Abstract

This paper dwelt on Information and Communication Technology (ICT) as a veritable tool for entrepreneurship education. Hence it examined the concept of ICT as the use of computer based information system and communication systems to process, store and transmit data. Entrepreneurship as skills acquired to establish a business outfit. The objectives of entrepreneurship include but not limited to identify and solve problems using critical and creative thinking. Examine the link between science, vocational and technical education, small business and entrepreneurship. Also discussed are the role of entrepreneurship in economic development such as economic and support facilities linkages, rural saving mobilization, utilization of local resources and rural materials, generalization of employment opportunities. It also highlighted some of the agencies for promoting entrepreneurship education such as small and medium Enterprises Development Agency of Nigeria, Industrial Development Centres, National Development Programme etc. ICT as a tool for entrepreneurship was highlighted. Problems of entrepreneurship education such as absence of mentorship, short duration of programmes, inadequate funding and capacity are explained. The following suggestion are made, which include the government and private organizations should establish a core entrepreneurship development institutions that will produce mentors and empower a good number of entrepreneurs in different economic sectors.

Keywords: ICT, Hardware, Software, Entrepreneurship, Technology

Introduction

Information and communication technology (ICT) has become within a very short time, one of the basic building blocks of modern society. Many countries now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core education, alongside reading, writing and numeracy. Information and communication technologies (ICT) are electronic technologies used for storage and retrieval. Development is partly determined by the ability to establish a synergetic interaction between technological innovations and human values. The rapid rate at which ICT have evolved since the mid 20th century, the convergence and pervasiveness of ICTs, gave them a strong role in development and globalization (Nwagwu, 2006). ICTs have a significant impact on all areas of human activities in this 21st century.

Iwu and Ike (2009) defined ICT as the acquisition, processing storage and dissemination of vocals, practical; textual and numerical information by a micro electronic based combination of computing and telecommunication. ICT simply means the use of computer based information system and communication systems to process, store and transmit data. It is to describe exciting and innovative ways to provide learners with global access to information, learning and support. It is an umbrella term that includes any communication devices or application, encompassing, radio, television, cellular phones, computer network, hardware, software, electronic mail, facsimile, satellite systems as well as the various services and application associated with them. The field of education
has been affected by ICTs which have undoubtedly affected teaching and learning. ICTs have the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experiences to work practices. It also creates economic viability for future employees as well as strengthening and helping schools change. To ensure this therefore, there is need for entrepreneurship education (Dawodu 2005).

**ICT Entrepreneurship Education**

In a rapidly changing world, basic education is essential for an individual to be able to access and apply information in opening up a business. The Economic Commission for African has indicated that the ability to access and use information is no longer a luxury, but a necessity for Entrepreneurship Education. The goal of entrepreneurship education enables the trainees and students to consider self employment as a viable option upon graduation from their institutions. Kalu and Onwukwe (2008) states that ICT permeates the business environment, it underspins the success of modern corporations, and it provides governments with an efficient infrastructure. At the same time, ICT adds value to the processes of entrepreneurship education, and in the organization and management of entrepreneurship sustainability. The internet is a driving force for much development and innovation in both developed and developing countries.

The use of ICT cuts across all aspects of economic and social life. Entrepreneurship developments in ICT are very rapid. This is because new versions of the old technology are on the increase. New and better ways of doing the old things are now with us. Technology quickly becomes obsolete requiring new skills and knowledge to be mastered frequently Adaptation is only possible when based on a sound understanding of the principles, and concepts of entrepreneurship education.

**Entrepreneurship Education in Nigeria**

The term entrepreneurship is derived from the term “entrepreneur”. According to Encyclopedia Americana (1989); Entrepreneur is a business man who assumes the risk of bringing together the factors of production and receives his reward in form of profit from market value of his products. Okeke (2007) defines entrepreneurship as the ownership and management of a private business and the bedrock of small scale business oriented towards the production of goods and services to satisfy the needs and wants of consumers. Dawodu (2005) observed that entrepreneurship enhances economic development, creates jobs opportunities, transforms traditional industries, and stimulates investment and increase per capital income and output.

On the other hand, entrepreneurship skills are relevant skills and competencies that will enable an individual seek and run an enterprise successfully. Richen and Salagrik (2003) noted that entrepreneurial skills are acquired through training that emphasizes the acquisition and development of appropriate knowledge and skills that will enable an individual to maximize the resources around him within the limits of his capacity. Therefore, entrepreneurship education is a conscious effort geared towards the education and development of entrepreneurial knowledge, skills and ability essential in the management of an economic venture.

Entrepreneurship education is important to us because it is an education and training that allows students to develop and use their creativity to initiate responsibilities and risks. It has social and economic values. It helps to prepare the individual for life and most importantly, it gives a career opportunity to students or individuals who may never go to higher institution. Onwukwe (2008) rightly described the importance of entrepreneurship education as an education capable of
Reducing poverty in a population and empowering the disadvantaged segment of the population. A teacher who is well trained in entrepreneurial skills using information and communication technology will certainly teach the students skills that will be useful to them as well as change the society for better. Not only that the declining economic fortunes and rising waves of unemployment should be minimized through entrepreneurship education.

The reorientation towards entrepreneurial education must be the focus of government at large. A shift must be made from the presently mounted entrepreneurship education in our institutions which is theory as usual “to entrepreneurial spirit/skills development in the institutions.

Objectives of Entrepreneurship Education

The objectives for Entrepreneurship Education include but not limited to:
1. Identify and solve problems using critical and creative thinking.
2. Examine the link between Science, Vocational and Technical education, small business and entrepreneurship.
3. Organize and manage oneself and one’s activity.
4. Develop the spirit of creativity, logical thinking, self-reliance, independence and freedom of making one’s own decision.

Role of Entrepreneurship in the Economic Development of the Country

1. Economic and Support Facilities Linkages: No business exists alone without contacting other organizations or enterprises for one thing or other. The various sectors of the economy seem to be interrelated in the areas of production, distribution and preservation. Entrepreneurs or business organizations provide the needed local manpower, technical knowledge and services needed to operate and maintain facilities for constant production.
2. Rural Saving Mobilization: the establishment of community banks is a policy to help to mobilize rural savings for economic uses. These savings help to boost economic activities in rural areas.
3. Utilization of Local Resources and Raw Materials: The establishment of small business has helped to mop up the local agricultural products because these enterprises make use of the products for local manufacturing and this help to check waste.
4. Generation of Employment Opportunities: All the small and medium scale business generates more employment opportunities than most big enterprises. Many people depend on their business for their employment and may employ others to assist them.
6. Modification of Traditional Industries: The development of indigenous and local industries and technologies may be achieved through entrepreneurship education. Countries like Japan, Taiwan, Singapore, South Korea and so on gained substantial improvement in their local and traditional industries through indigenous entrepreneurship education.

Agencies for Promoting Entrepreneurship Education

Various agencies have been established in Nigeria to promote entrepreneurship and self employment. They include:

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1. **Small and Medium Enterprises Development Agency of Nigeria (SMEDAN):** The SMEDAN was established by the Act 2003 as amended in 2004. It is charged with the responsibility for promoting and facilitating development programme in the small and medium-scale industrial sub-sector. Its mission is to facilitate the access of micro, small and medium entrepreneurs to all the resources required for development SMEDAN (2007). SMEDAN provides entrepreneurship development services. The agency organizes capacity building programmes for prospective entrepreneurs to create awareness of business opportunities in various areas (fish farming, waste recycling, snail farming, and so on SMEDAN has developed two entrepreneurship development programmes – public service entrepreneurship targeted at public servants who are retired from the public service and youth coppers to assists them to engage in self-employment).

2. **Industrial development Centers:** Industrial Development Centers (IDCs) were established to render free technological managerial assistance to small and medium enterprises towards the establishment of new enterprises as well as the development, modernization and growth of existing enterprises. IDCs were established in 1962/1963 under the regional governments as an agency to promote small scale industries and taken over by the Federal Government in the 1970s. They serve as advisory and technical support centers for small-scale business.

3. **National Development for Employment Entrepreneurship Development Programme (NDEEDP).** NDEEDP runs an entrepreneurship Development programme for graduates of tertiary institutions and retired public/private sectors workers to enable them identify business opportunities. Participants are identified during a sensitization training conducted during the NYSC orientation programme. This is followed by the Start-Your-Own-Business training programme. In 2004, 37,687 NYSC members benefited from the entrepreneurship training programme, while 15,374 graduates of tertiary institutions benefited from the Start-Your-Own Business training (NDE, 2004 cited in Onwukwe 2008).

4. **Entrepreneurship Development Studies in Universities (EDS):** The National Universities Commission has made it mandatory for all students to be exposed to entrepreneurship training at university level. Most universities have established centers for entrepreneurship studies. A number of courses are offered to students in their third year. The courses are compulsory for all students irrespective of discipline.

5. **Private Entrepreneurship Development Programmes (PEDP):** A few NGOs also offer entrepreneurship development programmes they include the FATE foundation in Lagos, which promotes business and entrepreneurial development. It equips aspiring entrepreneurs with skills, tools, networking, and financing that they need to establish successful business. It targets youth aged between 22-23 years with a university degree. There is a mentoring programme as well as a loan support service for aspiring entrepreneurs.

**ICT as a Tool for Entrepreneurship**

Improved entrepreneurship education is essential to the creation of effective human capital in any country (Eroh, 2007). The need for ICT as a tool in entrepreneurship education can not be over emphasized. In this technology-driven age, everyone requires ICT competence to survive. Entrepreneurship educators are finding it very necessary to train and re-train their employees to establish, increase their knowledge of computers and other ICT facilities (Adomi and Amic, 2006). This calls for early acquisition of ICT skills by students of entrepreneurship education.
The ability to use computers effectively has become an essential part of everyone’s education. Skills such as bookkeeping, clerical, and administrative work, stocktaking and so forth, now constitute a set of computerized practices that form the core IT skills package: spreadsheets, word processors, and databases (Adomi 2005).

The demand for computer/ICT literacy is increasing in Nigeria, because educators realize that computers and other ICT facilities can enhance entrepreneur education. On the other hand, educators have also realized that computers can be a threat to their job, and the only way to enhance job security is to become computer literate. With the high demand for computer literacy, the teaching and learning of these skills is concern among entrepreneurs’ educators (Brakel, 2003). This is also true of other ICT components.

New instructional techniques that use ICTs provide a different modality of instruments. For the student, ICT use, allows for increased individualization of learning. In schools where new technologies are used, students have access to tools that adjust to their attention span and provide valuable and immediate feedback for literacy enhancement, which is currently not fully implemented in the Nigerian school system (Enuku & Emuka, 2000). ICT as a tool will prove beneficial in improving Nigeria’s educational system and giving students a better entrepreneurship education.

Problems of Entrepreneurship Education

1. **Absence of Mentorship**: There is need to introduce a mentorship programme into the training activities, so that young entrepreneurs can learn from successful businessmen.

2. **Institutionalizing Business Training in skills acquisition programmes**: Business training should be a core part of all vocational and skills acquisition programmes since most of the graduate of these programmes are expected to end up in self-employment.

3. **Short duration of Programmes**: Most of the programmes are short of duration ranging from one week programmes to a few weeks/months. There should be enough time to incorporate practical elements.

4. **Inadequate funding and capacity**: Considering the magnitude of the youth employment problem in Nigeria, and the number of potential beneficiaries there is need for increased findings in order to reach a larger number of youth annually.

5. **Absence of linkages between training agencies and institutions**: Most tertiary institutions have nothing or little evidence of collaborative arrangements between them and enterprises development agencies in the country.

6. **Linkages between Entrepreneurship Development Agencies**: The executing agencies were set up by different laws and care was taken to ensure little overlapping between their mandates. There is need for more collaboration between them so that they exploit each others strength for different activities.

7. **Poor technology of the three key agencies**, only the website of SMEDAN was functioning, and even the one has to register as a member to access information and this is a very different exercise.

**Conclusion**

It is obvious that training in ICT and entrepreneurship is central to self reliance. The present global economic crisis and the rising waves of unemployment have greatly emphasized the need for entrepreneurship education and ICT for production of skilled and self reliant individuals. Nigerian
needs functional technology centre for the production of skill and self reliant graduates from Secondary Schools, Colleges of Education, Polytechnic and Universities. In order to achieve the basic tenets of self reliance and entrepreneurship education required for the Nigeria’s society, we need to go back the drawing board and redesign our curriculum from primary to tertiary curriculum development as to decide what kind of skills, knowledge and attitude needed for the relevant for the entrepreneurship education.

**Recommendations**

In the light of the crucial issues discussed, the paper recommends as follows:

1. The Government and private organizations should establish a core entrepreneurship development institution that will produce mentors and empower good number of entrepreneurs in different economic sectors.
2. The Government should organize short-term entrepreneurship capacity development to assist emerging and practicing entrepreneurship to reach all sectors of economy.
3. The Government should make provision for financial assistance in form of soft loans to assist and encourage students and other public who might embark upon self-reliance industry.
4. The Government should ensure that all tertiary institutions should be made beneficiaries of ICT project.
5. Teachers with adequate skills in entrepreneurship education aim ICT complaint should be given compulsory packages for the establishment of small scale industry.
7. Every graduating student from tertiary institutions should be encouraged to own basic hand and machine tools appropriate to his or her areas of specialization for entrepreneurship activities after graduation.
8. The technical and vocational education curricula in the country should be reviewed and enriched with both the theory and practical components of entrepreneurship education.

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Community Policing in Contemporary Nigeria: 
A Synthesis of Models

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Abstract

The aim of this article is to explore ways in which the agencies of the indigenous Nigerian social control 
mechanisms can be integrated into the community policing project in contemporary Nigeria. It begins by 
discussing the ineffectiveness of community policing project based on the structures of the Nigerian police 
service a 'colonial legacy' in combating person and property crimes in Nigeria. The article describes the 
limitations of the Nigerian Police Organisation, the relevance of the indigenous agencies of social control in 
detecting and preventing the criminal acts of terrorism and kidnapping based on the notion that perpetrators 
of these acts most at times resides or hide in the locations where these criminals acts take place. The article 
concludes by reconverting that agencies of the indigenous social control systems be incorporated in the 
formal community policing project. Finally, apart from the formal collaboration between the police and 
agencies of the indigenous social control systems in the area of formulating crime prevention strategies, the 
police should be reorganised and be more responsive, civil and fair to members of the Nigerian citizenry.

Introduction

From its inception, the modern police institution worldwide had evolved various strategies for 
delivering services to their citizenry. However, the contribution of the police to the control of crime 
and maintenance of order today is debatable as studies of police effectiveness imply (Reiner, 1992; 
Bayley, 1994). From the onset, it is important we distinguish the ideas of 'police' and 'policing'. The 
police are a particular kind of institution whilst, 'policing' implies a set of processes with specific 
social functions.

As observed by Maguire et al: (1997), 'police are not found in every society, but 'policing' is 
arguably a universal requirement of any social order, which may be carried out by a variety of 
different processes and institutional arrangements. Traditionally, policing was the responsibility of 
all adults in a community.

In medieval society, all adult males were obliged to contribute towards the prevention and 
control of crime and disorder under the systems of 'hue, cry and pursuit' and the 'watch and ward 
that preceded the emergence of specialized police force as organs of the state. But the emergence 
of the state, and its vast bureaucracies anchored on centralization, hierarchical authority/power 
structure, and professional staff (Weber, 1968) changed the traditional policing philosophy rooted 
in the idea of policing as everyday's business. The emergence of the state as an entity with claim to 
the monopoly over the means of legitimate violence in society resulted into the creation of 
specialized agencies such as the police and the armed forces for controlling the use of violence by 
other groups (Alemika and Chukwuma, 2000).
In Britain, policing developed as a local affair with a role which has remained in force up till today, it is therefore the responsibility of everybody to maintain law and order. This role is rooted in the history and common law tradition of Britain that each citizen has a duty to suppress crime and disorder. Therefore, the burden of policing was placed on every adult citizen. It was an obligatory issue. These are the ways and forms on which policing as a profession today started. Policing and police did not start as a paid profession, it started as a noble, incorruptible profession with considerable responsibility and distinction (Ahire, 1993).

The aim of this article is to explore ways in which the agencies of the unofficial indigenous Nigerian Social control systems can be integrated into the activities of the Nigeria police to combat the variety of persons and property crimes that characterized the contemporary Nigerian society. A central theme is that addressing the contemporary security challenges in Nigeria both in terms of crime detection, prevention and control needs to be conceptualized as a community task. The ‘community’ includes a wide diversity of people and institutions with varying perceptions, interests and safety concerns. The local neighbourhood provides the physical site in which those criminal acts (be it acts of terrorism by the Boko Haram sects, kidnapping or armed-robbery e.t.c.) take place.

Using the principle of the Dialectical Materialistic approach, section one of this article discusses the evolution of the police institution in Nigeria. Contained in the first part also a summary of the tenets of the indigenous Nigerian social control systems. The second part discusses community policing as a new model/strategy to fight crime in the Nigerian society. As an off shoot of the Nigerian police service, the community policing project is based on the principles and doctrines of the Nigerian police organization. The effects of polices’ general conducts, and public perception of the police on community policing project is also discussed under this section.

Part three of the article attempts a broader comparative assessment of these two social systems (the Nigerian Police and Indigenous social control systems). The strength and limitations of the police institution and their effects on effective community policing in contemporary Nigeria is further discussed under part three. The article concludes with the discussion of a proposed synthesis of the principles and agencies of the two models to evolve a more effective community policing project in contemporary Nigeria.

The Nigeria Police: A Historical Perspective

To understand the role of the police in the control of crime in Nigeria, it is crucial to have knowledge of the historical factors in terms of political and economic forces that informed the establishment of the police institution in Nigeria by the British. This is because these socio-economic and political forces to some extent shaped the ideology, character and functional roles of the police as an institution.

Nigeria is a former British colony located in West Africa with a population of about 152 million, which makes it the most populous country in Africa, with one in six Africans being a Nigerian. The population is young (i.e. 50% younger than 20 years old) and ethnically diverse. There are more than 250 ethnic groups, but the three major ones are the Hausa/Fulani, Igbos and Yorubas constituting 68% of the Nigerian population (Bamgbose, 2002). Before the colonization of Nigeria, the various ethnic groups and nationalities had their indigenous and traditional social control agencies (Holleman, 1974; Milner, 1956). Issues of crime and disputes in the pre-colonial Nigerian state was mainly the duties of such institutions like cults, secret societies, messengers and palace guards (Milner, 1985). Traditional rulers were involved in the past in ensuring personal security of citizens, and their properties, by maintaining law and order through the native authority system, and their vast network of intelligence gathering system (Mohammed, 2003). Through these
traditional social control mechanisms, traditional authorities punished violators of the established norms.

The theoretical perspective deployed in this analysis is the *Historical Materialistic Approach*. That is a perspective that gives primacy to material conditions particularly the economic structures (Ake, 1986) to discuss this topic. The principles and assumptions of this theoretical frame will be adopted to substantiate our claims in this article. The central theses of scholars in this camp is that, the history of the establishment of the police institution in Nigeria is inseparable with the factors that account for the establishment of colonization in Nigeria by the British.

The circumstances that led to the European colonization of Nigeria and other society on the globe have become a topic of much bitter controversy among scholars (Boahen, 1991). Early writers such as Hobson and Lenin attributed it primarily to the rise of the new imperialism in Europe which was in turn the outcome of the economic forces operating in Europe by the 1870s and 1880s. In this particular respect it was necessary to invest the surplus capital being generated by these forces and Africa was seen as offering a good possibility. To others such as Robinson and Gallagher, colonization was more or less an accidental diplomatic by-product of the conflict among European powers; especially between Britain and France. According to this view point colonization was triggered off by the British occupation of Egypt in 1882.

The third and most current explanation being advanced by some European and African historians such as Hopkins, Uzoigwe and Asiwaju is that colonization was the outcome of a combination of external European factors and internal African conditions. As one of them contended:

“The establishment of formal colonial rule must be seen against the background of a major change in what came to be referred to as “balance of power” in Europe following the rise of Germany, and increasing political instability occasioned by Africa wars of the nineteenth century which came to threaten peace in African interior and consequently European trade on the coast”.

However, the present writer subscribes to the school of thought that see the colonial venture as being triggered by the economic, social and political forces operating in Europe in the nineteenth century (Amir, 1972; Brerte, 1973; Charles, 1964). Ake (1981) note that the contradictions of capitalization not only transform it, they also transplant it. The transplanting of capitalism arises from those contradictions which reduce the rate of profit and arrest the capitalism of surplus value. Confronted with these effects, it was inevitable that the capitalist, forever bent on profit maximization, would look for a new environment in which the process of accumulation could proceed apace. Capitalists turned to foreign lands attacked and subjugated them and integrated their economies in those of Western Europe.

The colonial police was created primarily in response to rioting and disorder directed against British interests. As rightly observed by Alemika and Chukuma 2005, there is need to recognise and comprehend three important historical factors that have shaped the development and character of the police forces and police-public relations in Nigeria. First, colonial conquest of Nigerian nationalities took place piecemeal over a long period of time (1861-1903). Nigeria’s constituent nationalities were conquered at different period. As a nationality is conquered a British colonial presence is established by creating a police force for the territory. Second, violence and fraud were employed in the conquest of the nationalities and police forces under various names were established and employed as instrument of violence and oppression against the indigenous
population. Third, given the character of colonial rule, police forces were the instrument used to sustain the alien domination.

The primary purpose of the police during this time was to advance the economic and political agenda of the colonizers. In many areas, the police engaged in the brutal subjugation of communities and the suppression of resistance to colonial rule. The use of violence and repression from the beginning of the colonial era, marked a dislocation in the relationship between the police and local communities which has characterized law enforcement practices in Nigeria ever since. For decades the police in Nigeria have betrayed their responsibility to protect Nigerian citizens and have instead preyed on them for economic gain. Indeed, the relationship between citizens and the police is very often characterised by brutality, confrontation, and exploitation.

Unfortunately 52 years after the demise of colonialism and series of reforms the Nigerian police institution still retains its oppressive and aggressive colonial character towards the Nigerian citizenry. The police roles in contemporary Nigeria therefore, contradicts the basic principles of community policing which is designed to unite the police with the community. That is an attempt to address crime problem through a working partnership with the community.

The Concept of Community Policing

The concept of policing is related to that of social control and is subject to the same variations in usage and interpretations. Indeed a recent dictionary definition identifies policing as “the function of maintaining social control in society (Wilson, 1993). When we append the word ‘community’ to policing (community policing) we are definitely referring to a community oriented approach to policing to combat crime. Community policing is in essence a collaboration between the police and the community that identifies and solves community crime problems. With the police no longer the sole guardians of law and order, all members of the community become active allies in the effort to enhance the safety and quality of neighbourhoods.

In sum community policing is the strategy where police departments work together in partnership with their community to reduce crime and the fear it generates, and being responsible for restoring a sense of community. In official circles, community policing is an idea that emerged in the mid-1980’s when it was realised that formal and informal means of crime reduction/order maintenance were complementary and that the community should work together to define “community crime prevention”(Rosenbaun, 1989).

The movement towards community policing has gained momentum in recent years as police and community leaders search for more effective ways to promote public safety and to enhance the quality of life in their neighbourhoods. Community policing strategies vary depending on the needs and responses of the community involved; however, certain basic principles and considerations are common to all community policing efforts. What then are the basic principles and the conceptual framework of community policing in general? How do community oriented and traditional policing differ?

According to Chris Braiden3 this concept was really “nothing new under the sun”. Although touted as the “latest and newest thing” in policing, Braiden1 that it is contended, neither new nor “thing”. He argued that community policing is actually a re-emergence of the founding philosophy on which Peel built his public police in 1829, and that the philosophy of community policing today can be found in one of Peel’s original principles.

To maintain at all times a relationship with the public that gives reality to the historic tradition that the police are the public and the public are the police: the police being only the
members of the public that are paid to give full-time attention to duties which are incumbent in every citizen in the interest of community welfare and resistance (Bittner, 1967).

Braiden argued that his passage is a most accurate and concise definition of community policing. It was Peel’s contention that a community must police itself, with certain members paid to do it full-time in uniform while the rest did it part-time as they went about their daily work. Moreover, the phrase “in the interest of community welfare and existence” demonstrates that Peel’s thinking was clearly not limited to crime, criminals, criminal investigations, or law enforcement. Braiden concluded that what Peel was describing in 1829 is now being called community policing (Peak and Glensor, 1996).

In historical perspective it will be instructive to note that contemporary community policing could be considered the handiwork of Sir Robert Peel when he established the London Metropolitan Police. He set forth a number of principles, one of which could be considered the seed of community policing “the police are the public and the public are the police”.

This therefore is the model of community policing that is once again transferred and implemented in Nigeria to deal with Nigeria’s contemporary criminal problem.

The basic issues raised by the above and which one considers important here is the mutually beneficial ties between police and community members which is the dominant philosophy underlying the community policing project especially in Britain. That is the complementary core components, community partnership and problem solving. To develop this community partnership, the police must develop positive relationship with the community, must involve the community in the quest for better crime control and prevention, and must pool their resources with those of the community to address the most urgent concerns of community members.

Major questions arising from this analysis could be summarised as follows: Is the crime scenario in Nigeria a reflection of the typologies of crimes that occur in Britain? Can the same methodology of combating crime adopted in Britain produce the same results in Nigeria? If for decades the Nigerian police institution has betrayed their responsibility to protect the citizenry and have instead preyed on them for economic gains how then will members of the public cooperate with the police personnel for effective community policing? Will the community police project be successful if the relationship between members of the public and police personnel is constantly conflictual and violent?

The history of police in Nigeria is a “legacy of arbitrariness, ruthlessness, brutality, vandalism, incivility, low accountability to the public, and corruption” (Alemika, 1988, P.161). This horrible image of the police prompted a onetime Inspector General of the Nigeria Police Force Sir Mike Mbama Okiro to state that “our focus shall be to reverse the disdain and contempt with which policemen are held within the Nigerian society........ There is no gainsaying the fact that the police image is now at a low ebb” (Nigeria police force, 2007b).

Research conducted in 2000 by the centre for Law Enforcement and Education (CLEEN) found that the use of violence by the police against citizens in Nigeria was widespread. Of 637 respondents to a survey carried out in fourteen states, 14.8 percent said they had been beaten by the police, 22.5 percent said police has threatened to shoot them in the past, and 73.2 percent said

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1 Braiden is former superintendent of police in Edmonton, Alberta, Canada, and consultant in community policing

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they witnessed the police beating another person. A sample of 197 prison inmates, revealed higher figures of police abuse; 81 percent of the respondents said they had been beaten or slapped and 39 percent burnt with hot objects (see Human Rights Watch, vol. 17). This further reaffirms our proposition that, the rift between the police and the Nigerian citizenry makes community policing a failed project in contemporary Nigeria. It has therefore failed to meet contemporary Nigeria crime and security challenges. The brutal oppressive and repressive conducts of the police beginning from the colonial era (features the police maintain to date) made the Nigerian public regard them as their enemy, this is a rift between the police and members of the local community.

As indicated earlier before the colonization of Nigeria, different ethnic nationalities which presently constitute Nigeria today had their traditional social control mechanism. These indigenous social control systems performed modern police functions. These systems of social control were deeply rooted in the community and closely interlinked with the social and religious structures.

These include agencies such as Age Grades (formal organizations whose membership based on pre-determined age range), secret societies or vocational guilds (for example, of hunter’s farmers or fishermen). Through these diffuse systems of crime control, law and order was maintained largely without the use of violence (Akin, 1994).

In contemporary Nigeria some variety of these indigenous social control systems still exist. These alternative unofficial social control systems now represented in agencies like the Bakasi Boys of the Igbo, the Hisha of the Hausa/Fulani, and the Odu’a people’s congress (OPC) of the Yoruba among many others. Basically, these indigenous social control systems operate based largely on indigenous ideas of social control. The guiding principle of these indigenous systems are derived from the norms and values of the indigenous people rather than the traditions, customs and practices of other societies outside Nigeria. Apart from the large, coordinated, and well-organized indigenous organizations (the likes of Bakasi Boys, Hisha and OPC) there are numerous other indigenous watch organizations or vigilante groups that guarantee community security. Okafo (2007) notes that

“Generally, these groups are more active in the night than during the day. Usually, able-bodied young men of each community supported financially and materially by other community members, are charged with the task of securing the community and enforcing law, often with the aids of small weapons, such as machetes, bows and arrows, spears, and some guns.”

It is instructive to note that, traditional policing and vigilantism is widely accepted in Nigeria by the citizens. Members of a society to which traditional policing e.t.c apply generally accept and participate in their indigenous systems. Being part owners of the system, it is very unlikely that any significant part of the population will be excluded from the system or its mode of operation Okafo (2007) further notes that ‘decisions are made and enforced with members’ knowledge and consent.

Comparatively, the principles, and personnel of the indigenous social control systems are products of the natives as such they command acceptability more than their police counterparts. Also of critical importance is the fact that most Nigerians lack trust and confidence in the official police simply because they consider them to be ‘alien’ agents of the Government that is equally perceived as being corrupt and unfair. Majority of Nigerian presently consider police’s response to the crime problem as been grossly inadequate.
Conclusion and Recommendations

This article has identified a number of reasons why community policing framed after the Nigerian police structure cannot effectively control persons and property crimes in Nigeria. The Nigerian police as an organization has a long history of engaging in acts of brutality, violence and harassment of members of the public as such they lack public cooperation and acceptability.

Police attitudes and conducts in Nigeria violates the basic requirements and principles of community policing.

We therefore recommend the following:

For community policing to be effective and efficient in combating crimes in Nigeria, the agencies of the intelligence social control systems be formally incorporated to work with the police.

Most members of these indigenous social control agencies are as indicated Indegenes of their local communities and more conversant with the environment and terrain.

Members of the police be given a new orientation (through their trainings) to recognise, and protect the dignity and rights of the Nigerian citizens to establish cordial relationships with the citizenry.

More importantly, the police organisation be more accountable, civil and incorruptible in their dealings with members of the public. This will change the negative perception members of the Nigerian public have on the police.

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Islamic Anthropology in Contemporary Epoch

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Abstract

Any System of Knowledge that looks into human kinds different dimensions or special Groups and Cortex of Man is called Anthropology. Anthropology has various types that are distinct from each other in terms of approach or attitude. Anthropology can be based on a variety of experimental approaches to anthropology, mystical, philosophical and religious be classified. But according to a macro or holistic approach to anthropology and anthropological wisdom or prospective component was divided. To solve the puzzles and questions about human in history philosopher has chosen different ways of studying humans. Some has chosen the experimental method so the experimental anthropology has been established that includes all fields of human sciences. Some tried to find different aspects of human by philosophical thoughts, so they called this type of anthropology, the philosophic anthropology. Some tried to find who is human by looking in to religion so they build religious anthropology. In Islamic thoughts human is really different from other creatures. He is not an animal that can walk on two feet and can talk, he is different from animals. Human in qouranic thought is a very mysterious creature that cannot be defined with few words. Quran has praised and criticized human, the highest praised and the greatest criticizes were given to men. He could go high as angels and can lower himself worse than an animal. From Quran’s point of view human can and have the ability to bring himself up even higher than angles, he also has the ability to lower himself to hell. Human has this ability to decide his own destiny.

Introduction

By reading and studying the theories about human that was given throughout the history we will find quite a mount of them that all point out human to structure and anatomical theory’s but none of them say a thing about cognitive excellence structure of human. Anatomy and somatology studies the chemical activity of human and physicians study physical disorders in human. Sociologist of the industrial world study human in order of his use in industrial world and how much dose a human worth economically. Health care tried to prevent diseases and tried to fix the health problems in the society. Education offices tried to teach and improve intelligence and physical health of people. All this scientists tried to change was based on human body, health and intelligent. They have found a lot of secrets about the structures of human body and other things on earth and beyond it but they filled to achieve morality for human, they did not improve cognitive excellence in humanity.

But the truth is that mankind did not grow morally with its giant growth in science. And that is one of the biggest tragedies of the time. All the knowledge and science is in the hands of people who do not respect morality, god and religion. We have to always have in mind this old saying of all religion that the main work and aim of mankind is not reproduction, science or in one word is not upgrading life, it is improving the quality of moral and spiritual perfection. Science by expressing
qualities in mathematical language putted the spiritual and moral quality unqualified to be measured so they slowly had been forgotten.

While what can be measured in mathematical language is not more important than what cannot be measured. Maturity and the quality of morality and behavior are the priority of human life.

It is only through religious knowledge that we can understand and find ways to approach morality and human behavior. The failure of social scientists at understanding human behavior and the phenomena of moral – humanity behavior is that they do not believe and did not try to understand the hull complex structure of human. Identifying the human complex structure is out of the ability of natural sciences professionals. Because it's complication are more than the information and the knowledge that these Specific fields of science have.

Human at The same time is an object, a living being and is a center of spiritual activity, like compassion, sacrifice, righteousness and martyrdom.... Closeness to God, piety and faith are more important than eating, sleeping and generate. Biologists and most natural science scholars believe that success in life depends on terms of survival of man and its generation and the increase amount of power and efficiency of the body and intelligence.

In religious thoughts, if man could not or did not gain any good spirit and did not approve his morality and did not try to gain the best for his society and others, he's a loser and unsuccessful in his life. And the real winners and succeeded peoples are:

"Successful indeed are the believers* Who are humble in their prayers,* And who keep aloof from what is vain,* And who are givers of poor-rate,* And who guard their private parts,* Except before their mates or those whom their right hands possess, for they surely are not blamable,* But whoever seeks to go beyond that, these are they that exceed the limits;* And those who are keepers of their trusts and their covenant,* And those who keep a guard on their prayers;* These are they who are the heirs,* Who shall inherit the Paradise; they shall abide therein." (Chapter al-mohmenoon 23, verse 1-11)

Islamic anthropology, applied knowledge and promote public service and their approach to God. Divine Ethics requires that human could recognize himself from others of his rank and could find and define his position to them. This recognition should be based on their evaluation of their personalities and behaviors and others too, for this they should classify behaviors and actions and characters, and understand the association between each type of behavior with each type of personality, find The mystery of the formation and development of a character, and we should know that the character of everyone will start to gain shape after freely choosing the life that it belongs to and that is actualizing emotional behavior so emotional, or sensory perception, learning, memory and recall specific actions and behaviors or actions that are rational and have the integrity could be brought up and shown. So we could say that the uncertain and ambiguous actions and behavior of an individual can be specified and evaluated and they all could be named or can be avoided or be replaced by each other.
Nonreligious scholars and scientists that tried to look into ethics and morality and there influence on human and society admitted that they could not recognize the cognitive excellence of the human.

John Dewey (1859 - 1952) American philosopher, psychologist, and sociologist admit to this inability: "The development therefore of a more adequate science of human nature is a matter of first rate importance. The present revolt against the notion that psychology is a science of consciousness may well turn out in the future to be the beginning of a definitive turn in thought and action. Historically there are good reasons for the isolation and exaggeration of the conscious phase of human action, an isolation which forgot that " conscious " is an adjective of some acts and which erected the resulting abstraction, consciousness," into a noun, an existence separate and complete. These reasons are interesting not only to the student of technical philosophy but also to the student of the history of culture and even of politics. They have to do with the attempt to drag realities out of occult essences and hidden forces and get them into the light of day. They were part of the general movement called phenomenalism, and of the growing importance of individual life and private voluntary concerns. But the effect was to isolate the individual from his connections both with his fellows and with nature, and thus to create an artificial human nature, one not capable of being understood and effectively directed on the basis of analytic understanding. It shut out from view, not to say from scientific examination, the forces which really move human nature. It took a few surface phenomena for the whole story of significant human motive-forces and acts.

As a consequence physical science and its technological applications were highly developed while the science of man, moral science, is backward. I believe that it is not possible to estimate how much of the difficulties of the present world situation are due to the disproportion and unbalance thus introduced into affair."(Human nature and conduct, John Dewey, p.p. 321-323)

Crisis of mankind, it is importance, and the necessity of solving it immediately are the problems that have required the religious anthropology, the anthropology that deals with the processes of degeneration and excellence. We know that the human innate stimuli are such as natural forces and the national capital, that have more effect on the survival and viability of the community than other sources of national wealth, because it is one of the most important part of the social processes. So it is vital to understand it and this is possible only with religious anthropology.

By understanding the human innate stimuli we can find valuable law and social systems for societies. These phenomena help us to understand the historical process, social process, and predict the future of any human community. Religious anthropology provides useful approaches and tips for scholars in sociology. Philosophy, law, psychology, and political science for their research topics, and it give them the ability to not use non-critical categories of psychology and baseless anthropology.

In the religious books such as Quran, Bible, and Torah the God in addition of expressing who he is, he shows the way of reaching to him, what is right and wrong, Facts about human structure and growth and decline of his spirit and the reasons of human behavior and how to evaluate it. The human structure is part of this psychology and anthropology.

Human structure is a system and organization that God has given him:

"وَأَلَّاَلِيُّ قَدْرَ فِهَدَيْنَ اِلْدَيْخُ لَقَدْ قَسَّوْعَ "

"Who creates, then makes complete,* And Who makes (things) according to a measure, then guides (them to their goal),"
Human structure is composition and mixture of negative and positive talents and abilities and features a variety forces:

“إِنَّا خَلَقْنَا الْإِنْسَانَ مِنْ نُطْفَةٍ أَمْسَأَتْ بَيْنَهُمَا فَجَعَالَهُ بِمَا تَصِيرَ”

“Surely we have created man from a small life-germ uniting (itself): We mean to try him, so we have made him hearing, seeing.”

There is independent will for the man that gives him the ability to select and to be responsible for what he does or does not do; his personality will improves with the temptation.

“وَفَقَرْتُ مَنْ دَسَّهَا، فَأَفْلَحَ مَنْ زَكَّاهَا، فَأَلَهَمْهَا فَجَعَالَهُ بِمَا تَصِيرَ”

“And the soul and Him Who made it perfect,* Then He inspired it to understand what is right and wrong for it;* He will indeed be successful who purifies it,* and he will indeed fail who corrupts it.”

This theory about the human structure is contrary to all human imagination. Philosophers, sociologists and psychologists who have addressed this issue, believe in that human nature is either absolute good or evil. Some imagine human as a whit piece of paper that society, family, economic conditions and the ways they are produced and the relation between them can draw any lines they desire on it. As if evil, oppression, arrogance, wars, murder and pillage, or devouring are behaviors that is caused by social environment or disability or poverty or from psychotic and intellectual disorders.

**Human character**

The most important matter on human character that Islamic anthropology has to say is as follows: human character existent with in the within the existent system of the world and universe.

A. This structure is influenced by social and natural environment and it has effects on both, by Qualitative transformation of people in a society their nature and social environment changes too.

B. Among individuals there are common features that they are based on, when we talk about human structure or character we mean this part of human.

C. Some hereditary characteristics that is dedicated to some people or a social group it’s their special character and it’s apart from the common features.

D. in our personality there is a vulnerable part that put us in biological and moral danger. These vulnerabilities that are rooted in our innate structure can be called negative talents.

E. Beside this vulnerable section of our structure, there are positive talents and abilities that were granted to us that help to get closer to God, and try to approach his moral attitudes.

Some of those talents are: 1. Intelligence, or talent to dominate nature. 2. Knowledge of itself existence. 3. Personality. 4. Wisdom. 5. Knowledge of God, and good and bad. 6. Will. 7. Knowledge of weaknesses and opportunities of environment and its structural. 8. Seeking the truth. 9. Knowing mechanisms of excellence. 10. The ability to repent.
Some of the human entity structures such as, family, race, and somewhat social environments, have imposed upon him without his will.

"Praise belongs to God, the First, without a first before Him, the Last, without a last behind Him. Beholders’ eyes fall short of seeing Him, describers’ imaginations are not able to depict Him. He originated the creatures through His power with an origination, He devised them in accordance with His will with a devising. Then He made them walk on the path of His desire, He sent them out on the way of His love. They cannot keep back from that to which He has sent them forward, nor can they go forward to that from which He has kept them back. He assigned from His provision to each of their spirits nourishment known and apportioned. No decreaser decreases those, whom He increases, no increaser increases those of them whom He decreases. Then for each spirit He strikes a fixed term in life, for each He sets up a determined end, he walks toward it through the days of his span, he overtakes it through the years of his time. Then, when he takes his final step and embraces the reckoning of his span, God seizes him to the abundant reward or the feared punishment to which He has called him, That He may repay those who do evil for what they have done and repay those who do good with goodness as justice from Him (holy are His names and manifest His boons)." (The Perfect Book of al-Sajjad, In Praise of God)

**Linkage of human character with the world**

The reactions that we show toward sin and ignominy as regret and discomfort and toward good work and oblation as pleasure and confidence it is not the only reaction toward these behaviors, because human forms a small part of existence System and he himself is a system that they function together. As soon as we prayer or do good deeds, both our entity and the existence System of the universe will move in an harmony to promote us and to give and show divine mercy.

Specific mercy is a particular massive and continuous process of existence system of the world that will be actualized by worshiping God and good deeds that people do. But the common mercy of God is not as a reword like the specific mercy, it is given to all creatures as boon and benignity. The specific mercy a reward to people who use there boon and benignity in the right way that will count as thanks to God for what he has given us, but it will be Withhold from those who are disbelievers of God and how misuse the boons and benignities that were given to them.

The agony and the torment is this withholding specific mercy from God and the Satisfaction and comfort is the security and confidence that is caused by receiving the specific mercy. This is the meaning of this verse:

"والذين أسأوا بالحسنى، غفلاً منه، تغتَّست آسفاً، وَتَظاهرت الأولى."
“O soul that art at rest!* Return to your Lord, well-pleased (with him), well-pleasing (Him),* so enter among my servants,* and enter into my heaven.”

In addition to individual, community and nation will be affected by this law too. So if a society choose to go the wrong way and misuse the benignities that they were given they have to face the consequences of not receiving the specific mercy from God.

"إِنَّ اللَّهَ لاَ يُزِيدُ نَاساً شَيْئًا مِّن غَيْرِ نَاطِقِهِمْ وَإِذَا أَرَادَ اللَّهُ بِنَاسٍ سُوءًا فَلَا جُزَاءَ لَهُمْ وَمَا لَهُمْ مِّن دُونِيَّ مَن وَالٌ"

“Surely Allah does not change the condition of a people until they change their own condition; and when Allah intends evil to a people, there is no averting it, and besides Him they have no protector.”

And when God wants punishment or foreboding for people no obstacles can stand it and there is no one who can support them.

So receiving specific mercy is like receiving a grant for pure life and progress in it for believers. In the point of view of Islamic anthropology progress in morality and reaching for divine morality for individual entity is not apart or separate from the universal existence but it is in an accurate coordination with complex movements of existence system of universe. Our entity is a small component in this universe.

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Media Imperialism and Body Image Perception in Kuwait

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Abstract
Mass Media has a long-standing reputation of influencing perception and affecting behavior. And in the age of globalization investigating its influence in different cultural contexts has become increasingly relevant. Perpetuating unrealistic standards of body types is just one way mediated messages are said to influence negatively an audience. By way of TV, magazines and movies, the media imperialism of the United States is having a strong presence in small countries like Kuwait. The same media effects, on body image and identity, that are found in the US should also be observable. Furthermore, the social comparison theory states that an individual evaluates their own opinions by comparing themselves to others. Exposure to US media, in this case US television shows, offers individuals characters to whom to compare themselves. This study examines how US media imperialism and the social comparison theory through media affects body perception by examining how often college-age young adults watched shows with prominent thin television characters compared to shows that had a diversity of body types in the core cast. Being exposed to programming with only thin characters is expected to correlate positively with body dissatisfaction. The study included distributing 286 preliminary surveys to discover what were the most popular shows being watched by college students (mostly 18 to 25 year olds). After the most popular shows were identified, surveys were circulated to a sample of 240 college-age young adults (120 males and 120 females) to determine if any correlation could be made between their television show preferences and their body dissatisfaction, or lack thereof.

Keywords: body image, media imperialism, cultural imperialism, social comparison theory, Kuwait

Introduction
Cultural imperialism is a mode of thought that asserts that foreign culture invades countries through the dissemination of primarily American entertainment and news content. The American mass media is vastly imported to other nations and the fear is that these countries, many being third world, will have their own cultural values and traditions eroded and replaced with American mores and viewpoints. Critics say that American values and the American point of view is becoming dominant across much of the world due to the exportation of Hollywood films, TV shows and international news based out of the United States. Case in point, is US exported news coverage about regions such as South America, who are often portrayed as in involved with drug trafficking and revolutions, as these are issues that primarily affect US interests and US audiences. In many countries US media has displaced or/and eroded the local media, who are unable to compete with the demand and marketing dollars of US entertainment. To this extent, many countries who see the danger of cultural/media imperialism have placed media quotas on US entertainment content to
help offset the damage done to their own domestic media industries and to hinder possible cultural influence and degradation (Dominick 2009).

Petras (1994) asserts that cultural imperialism has two main goals: to gain an economic foothold on foreign markets and the other being political and to shape audiences through cultural hegemony. Cultural imperialism consciously works to separate the audience from their own cultural heritage and traditions. In his article, Petras makes the point that audiences are largely working class who see US media as a way of assimilating a desirable modern lifestyle. The author postulates that the message is often directed toward young people who are more susceptible to the influences of mediated messages. The youth are the primary market of US media imperialism not only because they are the most lucrative demographic, but because they are the most attracted to US consumerism and ideas of individualism (Petras 1994).

Petras discovered the following: In relation to the third world, cultural imperialism can be defined as the systematic penetration and domination of the cultural life of the popular classes by the ruling class of the west in order to reorder the values, behavior, institutions and identity of the oppressed peoples to conform with the interests of the imperial classes (p. 2070)

However, there isn’t a popular consensus on the definition of media imperialism (Fejes 1981). In his article Fejes, articulates that media imperialism emerged from the dependency model as opposed to modernization theories. Modernization revolves around the development of social values, while the dependency model focuses on the relationship between developed and underdeveloped nations, and the problems that arise from that link: underdeveloped nations are at a disadvantage in a political and economic system that favors developed nations. Modernization theorists view the developing countries as evolving social ideas and ideals on a continuum with western industrial nations as the archetype of where this evolution will eventually culminate.

No matter the definition, the influence of media imperialism especially on body image is prevalent and empirical. A wide body of studies have deduced strong causal relationships to substantiate its influence. One three-year study of body image of Fijian women, after the introduction of television, discovered that western programming with the depictions of thin American ideals of beauty led to a precipitous increase in bulimic behavior among teenage girls in the country. Moreover, the Fijian females’ sense of being beautiful had also decayed dramatically due to US TV programming (Wykes & Gunter 2005). This has been the trend in other countries: In Italy where men often report to prefer full figured women, the influence of media imperialism on body image is again observable. Florentine women are now facing problems with perceptions of their bodies because of the prevalence of US media messages. This trend is especially pervasive among teenage girls. Furthermore, the rise of eyelid surgery, to mimic western features, is becoming increasingly commonplace amongst Asian women in far-east countries (Fedorak 2008).

Body Image

Body image dissatisfaction is the theory that individuals are unhappy with how they look in relation to their body. Researchers have been holding the media responsible for the rise in body image dissatisfaction in accordance with the sociocultural theory, which posits that people learn from social interaction. In the article, Striving for Bodily Perfection? An Exploration of the Drive for Muscularity in Canadian Men (2003) the authors of the study postulated that exposure to idealized male bodies would positively correlate with a desire to be more muscular and that men who use common social comparisons when evaluating their physical appearance will show a positive correlation with a desire to be more muscular. The researchers surveyed 310 male undergraduates enrolled in a community college and used the DMAQ scale (an 8-item scale that measures the

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desire to attain a more muscular body) and a modified USC scale to measure how much they use social comparisons (Hopkins, Morrison, Morrison 2003). The findings concluded that there was a strong correlation with fitness magazines showcasing ideal male body types and comparisons to universal standards of the idealized male form, with the strength of dedication of the respondents’ to attain muscularity.

Moreover, when one speculates how the media emphasizes unrealistic and aesthetic ideals, an image of a tall thin woman with perfectly groomed hair with unblemished skin often comes to mind, but studies have revealed that there has been an increase in emphasis on male aesthetic ideals in the media. In their paper, Jamie Farquhar and Louise Wasyliw (2007) argue that since the 1980’s the image of the male body has evolved to one that has been about the male form as a process, to where a man’s physical appearance has now become an object. Now the focus is not on what the body can do but what the male body looks like. To test their hypothesis the authors performed a content analysis of a sample of male bodies in the ads lining the magazine Sports Illustrated, from 1975 to 2005 (Farquhar, Wasyliw, 2007). The authors construed that since the 1970’s there has been a steady and strong increase in the trend of conceptualization of men’s body as an object, with a consistent surge in discrete male body parts across the sample of magazines.

In the past, the majority of research on body image dissatisfaction has focused on females who have consistently shown dissatisfaction with their bodyweight (Harrison 1997). However, research has been increasingly focusing on males’ body dissatisfaction (Morry, Staska 2001; Agliata, Tantleff-Dunn, 2004; Hobza, Walker, Yakushko, Peugh 2007). Though studies have discovered that both males and females do experience discontent with their body image, they have also given light to the differences in how males and females evaluate their physical appearance. Furthermore, the studies also show that the predictors and effects of body dissatisfaction differ for males and females. One result of body dissatisfaction is eating disorders. Eating disorders have been established to be affected by exposure to various mediated messages resulting in body dissatisfaction. Kristen Harrison (2000), distributed a questionnaire to 366 adolescents in three age groups, 6th, 9th and 12th grades that measured their media exposure and their interest in the messages that promoted body improvement. To measure their eating-disorder symptomatology, specifically their risk of developing anorexia nervosa, Harrison used the Children’s Eating Attitudes Test. Certain subscales from the Eating Disorders Inventory to measure bulimic symptomatology, body dissatisfaction and drive for thinness were utilized. Harrison hypothesized that exposure to thin-ideals through magazines and fat characters through television would produce body dissatisfaction among females and that exposure to media with fat characters would also negatively affect the male audience. Additionally, these relationships would be significant when a high interest to the content was controlled. Furthermore, she expected that males would be less affected by the male thin-ideal than the females. Harrison determined that exposure to fat-characters predicted the eating-disorder bulimia and anorexia for females. Surprisingly, exposure to fat-character themed shows also predicted body dissatisfaction and anorexia in young men. The findings of the effects of watching television shows were intriguing to Harrison and are further explored by our current study. The media has shown to be a reinforcing agent for individuals on the ideal body type, as well as a way for individuals to evaluate themselves. When audiences are exposed to thin ideal body images or fat-characters, they are at higher risk of becoming dissatisfied with their bodies (Harrison 2000; Hobza, Walker, Yakushko, Peugh 2007).

There are mountains of evidence that support the idea that exposure to mediated aesthetic ideals have an effect on behavior and attitudes. Anschutz, Van Strien and Engels (2011) discerned in their study of 124 female students that female students who practiced dietary restraint in their daily lives ate less snack food while watching a movie that had commercials with slim models and
diet products. The researchers theorized that those who were concerned with or were watching their weight would eat less after consuming ads with thin actors and diet oriented products. And to control for the mood of the movie, the researchers measured the students’ mood towards the movie itself. The authors concluded that restrained eaters were reminded of their eating behaviors when they were watching media content with commercials of slim models and diet products. As part of their study, Farquhar et al. (2007) also uncovered that viewing media that emphasizes and idealizes aesthetic attributes contribute to negative self-evaluations.

Furthermore, Grabe and Ward (2008) conducted a meta-analysis on research studies in 2008. Their data revealed that exposure to media that depicts the thin-ideal body is associated with body image dissatisfaction, internalization of the thin body ideal, eating behaviors and to a general sense of body image dissatisfaction in women. Grabe and Ward analyzed published papers such as experimental studies reporting media having a stronger effect on internalization of the thin ideal and eating disorder symptomatology than body dissatisfaction, while other studies show equal effects. Though the studies’ results seem to vary, according to Grabe and Ward media exposure to a thin-ideal body is related to body image dissatisfaction in women.

**Gender Differences**

How the media influences men and women differently has emerged through numerous studies. One example is an investigation by Marian Morry and Sandra Staska (2001). The study’s findings surmise that when women read beauty magazines they are more likely to internalize the body image of the models in the magazine, and these women’s degree of internalization is also a predictor of self-objectification – the concept of viewing one’s self as an object first and as a subject secondly. Consequently, individuals who self-objectify see themselves as entities that others judge by appearance, leading to a preoccupation with looks. For the female subjects in the Morry et al. study, internalization was also the only predictor of body dissatisfaction. Conversely, men would read fitness magazines and their degree of internalization of these ideal body type positively predicted body dissatisfaction. The researchers expected to find evidence for five hypotheses: 1) Men reading fitness magazines would internalize societal ideals and women reading fashion magazines would also internalize societal ideals. 2) Consuming magazines should link with self-objectification in both sexes and that internalization would regulate the self-objectification. 3) Consuming magazines would relate to body dissatisfaction, again regulated by internalization of societal archetypes. 4) An occurrence of eating issues should be observed, and mediated by internalization of societal archetypes. 5) Finally, reading fashion magazines (female respondents) and fitness magazines (male respondents) should produce a relationship with body shape dissatisfaction (Morry and Staska 2001). The researchers recruited 150 students and allocated a questionnaire that included five different scales: the Magazine Exposure Scale, Eating Attitudes Test, Self-Objectification Questionnaire, Socio-cultural Attitudes Towards Appearance Questionnaire, and Body Shape Questionnaire. The authors found that reading magazines was associated with internalizing societal ideals. For women reading magazines also predicted self-objectification. For men reading fitness magazines with a tendency towards internalizing, predicted body shape dissatisfaction but not eating problems, but when men read fitness magazines while being already dissatisfied with their body type, eating problems were present (Morry, Staska 2001; Stice, Schupak, Shaw, Stein 1994).

Other studies further show that when men are exposed to media images depicting muscular-ideal characters these messages definitively lowered their muscle satisfaction (Hopkins, Morrison, Morrison 2003). The authors surveyed 104 male students and showed them either 15 commercials
that depicted men having muscular physiques with their shirts off or 15 commercials depicting men not particularly muscular and wearing clothing that hid their body type. Expecting to find that exposure to ideal-muscular body images on television would lead to an increase in body dissatisfaction, the researchers did indeed find that the men’s dissatisfaction with their muscle size and physical attractiveness had increased while watching the muscular-ideal commercials more than the control group (Hargreaves, Tiggermann 2009). Interestingly, though men’s body-esteem is affected by exposure to muscular body types, their self-esteem was not affected (Hobza, Walker, Yakushko, Peugh 2007). However, certain studies says that when men are exposed to ideal image advertisements they become depressed, indicating that more research in the area is needed to reach a consensus on the subject (Agliata, Tantleff-Dunn, 2004). Case in point, when males are exposed to media ideals that emphasize performance attributes, it can contribute to self-evaluation (Farquhar & Wasyliw, 2007).

A method to better understand how media exposure affects individuals is to study ways that can protect them from the harmful effects of thin body ideal exposure, such as eating disorders. For example, when women are exposed to average sized women in mediated messages this leads to less restrictive dieting habits (Fister & Smith 2004).

Internalization has been found to be an important factor in mediating body dissatisfaction in individuals (Morry, Staska 2001). Culture is indicated also to take a back seat to internalization, according to a study done on Asian-American women that deduced that those who internalized media messages on ideal body types reported lower self-esteem (Lau, Lum, Chronister, Forrest 2006).

**Arab Body Image**

This study attempts to investigate how common body dissatisfaction is in Kuwait and taking from studies done on other countries that are part of the Gulf Cooperation Council. Countries in the GCC are culturally very similar and have experienced similar economic booms because of their reliance on oil wealth; therefore perusing research that was done in those countries can shed light on how Kuwaitis feel about their bodies. Thomas, et al. (2010) explored the pervasiveness of onerous eating habits among female Emirati college students in the United Arab Emirates and the connection between these habits and heightened body image issues. The Eating Attitudes Test was distributed to 228 female students attending a local university in the UAE. To measure body dissatisfaction the students also completed the Figure Rating Scale. The researchers discovered that nearly 1 in 4 of the students scored high enough to indicate irregular eating patterns and possible eating pathology. Further, nearly three out of four of the students were dissatisfied with their body image. A positive correlation between disordered eating attitudes with body image dissatisfaction, and a negative correlation with body image ideals was found. The study indicates that disordered eating attitudes amongst the UAE young female population is comparable to countries like the US, where eating disorders have been present for years (Thomas, Khan, Abdulrahman 2010).

A research study conducted on Saudi Arabian schoolgirls (Al-Subaie 2000), examines the dieting behavior of female Saudi teenagers. In the paper, 1,271 Female students from Grades 7 to 11 filled out a demographics sheet and the Eating Disorders Inventory, including their height and weight. More than one in six scored positively on the Drive for Thinness subscale. However, the intriguing part is the effect of predictors of dieting behavior: the girls’ body mass index, speaking a western language, having lived in a western country, well-educated parents, small family unit, and having gainfully employed parents. Sixteen percent of the school girls from the study were found to be above the pretest evaluation for the drive to be thin, had previously lived in the west for at
least six months. The authors Soh et al. of the article *Eating and Body Image Disturbances Across Cultures: A Review* (2006) interpreted the findings as an indicator of exposure to western culture. But the limitation here is that traveling to a western country or speaking a western language can be the result of coming from of an affluent or well-educated household, so other variables may be at work, which could be affecting the results of the research (Al-Subaie, 2000; Soh, Touyz, Surgenor 2006).

**Social Comparison Theory**

The social comparison theory posits that individuals compare themselves to others in order to evaluate or to enhance some aspects of the self. The media is a primary agent of the social comparison theory. Researchers who examined this theory postulate that when individuals compares themselves on with universal standards of body image then negative effects on their own body image was often found (Morrison et al. 2003). Serving as a self-evaluation tool, the social comparison theory depends on whether the individual internalizes or differentiates his or herself compared to others who are viewed as superior or inferior (Suls, Martin & Wheeler 2002). A study conducted by Frisby (2004) examined how much race played a role, if any, in body image self-evaluation. She exposed African-American women who had different levels of body esteem to advertisements of thin, physically attractive, white and black models and gauged their self-evaluation afterwards. She surmised that viewing Caucasian ideals did not lower the African-American women’s self-evaluation regardless of the previous level of body image. However, when exposed to idealized black models, the black women who previously reported low body esteem now reported body dissatisfaction. Frisby’s study argues that when black women are exposed to idealized images of women who are similar in racial makeup to themselves problems of self-esteem may surface (Frisby 2004). In at look at male participants, Thornton and Moore (1993) investigated men’s self-ratings of their physical attractiveness. The respondents were divided into groups and exposed either to the highly attractive models or less attractive models. As anticipated, the men who had been exposed to the highly attractive models reported high-levels of body dissatisfaction (Morrison et al. 2003).

The present study is investigating the media’s influence on male and female body image dissatisfaction in an Arab country with a high prevalence of US media. The following are the hypotheses that we will prove in our research:

**Hypotheses**

1) The more respondents watch US TV shows, will lead to greater appearance evaluation
2) Comparable effects of TV shows on body dissatisfaction found in Western studies will be observed in our study in Kuwait.
3) Watching TV shows with skinny characters will lead to greater body dissatisfaction.
4) Female respondents will report greater body dissatisfaction than male respondents.
5) Respondents viewing shows with average body types will report less body dissatisfaction than those watching shows with skinny characters.

**Method**

**Sample**

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A paper-and-pencil cross-sectional survey (N = 233) has been conducted in several classes of a liberal arts college in Kuwait. More than three-quarters of the student sample (75.9%) reported they were Kuwaiti citizens, while the rest reported being nationals of other countries (one respondent did not report his/her nationality). About a half of the sample (48.9%) reported they were males. Seven respondents did not report their gender. Over the half of the respondents (50.4%) were from 21 to 24 years old; 46.1% reported they were 18-20 years of age, and 3.4% didn’t report their age.

**Procedure**

Paper-and-pencil questionnaires were distributed in a number of classes to ensure higher response rate. The survey was administered in English, which is the official language of the university where the study was administered.

**Measures**

**TV show viewing**

Before identifying how often respondents viewed certain television shows, we first generated the list of shows, both Western and Arabic, which were the most popular among the college students. For this purpose, 286 students were surveyed. Based on the students’ responses, the list of 21 most viewed TV showed was created. Nine of these shows were Western (predominantly American, such as “How I Met My Mother”, “Modern Family”, “The Office”, among others), and 11 were produced in the Middle East (e.g., Noor (نور), Ajial (أجيال), Al-Ghareeb (الغربي)). Each respondent rated on a scale from 0 (“Never”) to 3 (“Often”) how often he/she viewed each of the selected shows.

**Viewing Western and Arabic shows.** The responses to the questions about show viewing were averaged separately for Western shows and Arabic shows. As a result, two continuous variables, **Viewing Western Shows** and **Viewing Arabic Shows**, were computed.

**Viewing shows with skinny characters.** Four coders rated each show on a scale from 1 (“not at all”) to 7 (“a lot”) with regards to how skinny its characters were. Shows with the highest rating were considered as **shows depicting skinny characters**. Viewing scores for these shows were averaged to create a single variable. To account for possible gender difference in perceptions of characters’ skinniness, two male coders and two female coders rated the shows separately (intercoder reliability for males: Pearson correlation = .75, p < .001, intraclass correlation = .74, p < .001, Chronbach α = .85; intercoder reliability for females: Pearson correlation = .69, p < .001, intraclass correlation = .68, p < .001; Chronbach α = .81).

**Viewing shows with average-body characters.** Four coders rated each show on a scale from 1 (“not at all”) to 7 (“a lot”) with regards to average body types its characters had. Shows with the highest rating were considered as **shows depicting average-body characters**. The overall variable was computed based on the viewing scores for these shows. As in the previous case, gender differences in perceptions of characters’ body averageness were taken into consideration. Two male coders and two female coders rated the shows separately (intercoder reliability for males: Pearson correlation = .79, p < .001, intraclass correlation = .79, p < .001, Chronbach α = .88; intercoder reliability for females: Pearson correlation = .74, p < .001, intraclass correlation = .74, p < .001, Chronbach α = .85).
Due to the fact that each show was rated on two scales representing characters’ skinniness or body averageness, some shows were rated high on both. Such shows were excluded from the analysis.

We also used The Multidimensional Body-Self Relations Questionnaire appearance scale (MBSRQ-AS) by Cash, et al. (1985, 1986) a 34-item self-report appearance focused inventory for the assessment of self-evaluation and orientation of five subsets that excludes fitness and health items, which are found in the larger, more comprehensive questionnaire. The shorter questionnaire measures appearance orientation, appearance evaluation, overweight preoccupation, self-classified weight, and body area satisfaction.

**Appearance orientation.** Appearance orientation that represented extent of investment in one’s appearance was measured with the use of 12 items (Cronbach’s alpha = .74 for males; .72 for females, Cash et al., 1985, 1986). The respondents rated each of the 12 statements on a scale from 1 (“strongly disagree”) to 7 (“strongly agree”). Then, one variable was computed by averaging scores for each of the 12 items.

**Appearance evaluation.** Appearance orientation conceptualized as the feeling of physical attractiveness or unattractiveness; satisfaction or dissatisfaction with one’s looks was measured with the use of seven 7-point items (Cronbach’s alpha = .61 for males; .79 for females, Cash et al., 1985, 1986). For each item, 1 corresponded to “strongly disagree” and 7 corresponded to “strongly agree.” A single variable was calculated by averaging scores for each of the seven items.

**Overweight preoccupation.** Overweight preoccupation was defined as fat anxiety, weight vigilance, dieting, and eating restraint. This variable was calculated as an average of scores obtained with the use of four 7-point scales, where 1= “strongly disagree” and 7=“strongly agree” (Cronbach’s alpha = .66 for males; .75 for females, Cash et al., 1985, 1986).

**Self-classified weight.** Self-classified weight represented how one perceives and labels one’s weight, from very underweight to very overweight. Two 7-point scales from 1 (“strongly disagree”) to 7 (“strongly agree”) were utilized to measure this variable (Cronbach’s alpha =.66 for males; .78 for females, Cash et al., 1985, 1986).

**Body areas satisfaction.** Body areas satisfaction conceptualized as satisfaction with discrete aspects of one’s appearance was measured with the use of nine items (Cronbach’s alpha = .77 for males; .82 for females, Cash et al., 1985, 1986). The respondents rated each of the nine statements on a scale from 1 (“strongly disagree”) to 7 (“strongly agree”).

Lastly, we also distributed the Sociocultural Attitudes Toward Appearance Scale (SATAQ-3), which directly measures awareness and acceptance of cultural ideals of attractiveness. With this scale, we directly aim to gauge the impact of media messages on the level of general internalization; internalization from watching athletes, pressures felt from aesthetic ideals, and if respondents look to general mediated messages such as film, TV and magazines for information about the ideal standards of appearance (information). The following are descriptions of the variables used in this scale.

**Internalization-General.** Internalization-General meaning general influence of the media on perceived body size ideals was measured with the use of nine 5-point scales from 1 (“strongly
disagree”) to 5 (“strongly agree,” Cronbach’s alpha = .85 for males; .83 for females, Calogero et al., 2004; Heinberg & Thompson, 1995; Thompson et al., 1999, 2004).

**Internalization-Athlete.** Internalization-General that represented internalization of athletic ideals and sports figures in the media was measured with the use of five 5-point scales from 1 (“strongly disagree”) to 5 (“strongly agree,” Cronbach’s alpha = .70 for males; .71 for females, Calogero et al., 2004; Heinberg & Thompson, 1995; Thompson et al., 1999, 2004).

**Pressures.** Media pressure to achieve certain body size ideals was another variable measured with multiple 5-point items. from 1 (“strongly disagree”) to 5 (“strongly agree,” Cronbach’s alpha = .81 for males; .85 for females, Calogero et al., 2004; Heinberg & Thompson, 1995; Thompson et al., 1999, 2004).

**Information.** Information was conceptualized as the degree to which media is used as a source of information for determining body size ideal (Heinberg & Thompson, 1995; Thompson et al. 1999). The variable was measured with nine 5-point items from 1 (“strongly disagree”) to 5 (“strongly agree,” Cronbach’s alpha = .51 for males; .61 for females, Calogero et al., 2004; Heinberg & Thompson, 1995; Thompson et al., 1999, 2004).

**Gender.** Gender was included in the analysis because it was predicted that viewing television shows would be associated with body image variables in two gender groups differently.

**Results**

Simple linear and multiple regression tests were run to explore the relationships among independent variables (total TV show viewing; viewing Western TV shows; viewing Arabic TV shows; viewing TV shows with skinny prominent characters; viewing TV shows with characters who have average body types) and dependent measures (appearance orientation, appearance evaluation, overweight preoccupation, self-classified weight, body area satisfaction, general internalization, internalization from watching athletes, pressures felt from aesthetic ideals, and information). Only significant results are reported in this paper.

Nine simple linear regressions were run to explore the association between total TV show viewing and the nine dependent measures. It was indicated that total TV show viewing was positively correlated with appearance orientation, β = .14, p ≤ .05, appearance evaluation, β = .24, p ≤ .001, general internalization, β = .37, p ≤ .001, pressure, β = .34, p ≤ .001, and information, β = .31, p ≤ .001.

Nine multiple regressions were conducted to test the relationships between viewing Western and Arabic TV shows and nine dependent measures. First, it was found that viewing Western TV shows explained 4% (R²) of variance in overweight preoccupation (β = .20, p ≤ .001) when entered to the model by its own, (F(1,208)=8.71, p≤.05). Viewing Arabic TV shows added less than 1% to the variance explained (R² change, n.s.; F(2,208)=4.48, p≤.05). Viewing Western shows positively contributed to overweight preoccupation (β = .19, p ≤ .05; β = .04, n.s., respectively). Second, viewing Western TV shows explained 6% (R²) of variance in information (β = .25, p ≤ .001) when entered to the model by its own, (F(1,207)=13.54, p≤.001). Viewing Arabic TV shows added 5% to the variance explained (R² change, p≤.001; F(2,207)=12.68, p≤.001). Viewing both Western and Arabic shows positively contributed to information (β = .17, p ≤ .05; β = .23, p ≤ .001, respectively). Third, viewing Western TV shows explained 9% (R²) of variance in pressure (β = .29, p ≤ .001) when
entered to the model by its own, (F(1,207)=19.06, p≤.001). Viewing Arabic TV shows added 1% to the variance explained (R² change, p=.87; F(2,207)=11.11, p≤.001). Viewing Western shows positively contributed to pressure but the same phenomenon was not observed with Arabic shows (β = .25, p ≤ .001; β = .12, n.s., respectively). Fourth, viewing Western TV shows explained 11% (R²) of variance in general internalization (β = .33, p ≤ .001) when entered to the model by its own, (F(1,207)=25.49, p≤.001). Viewing Arabic TV shows added 2% to the variance explained (R² change, p≤.05; F(2,207)=14.91, p≤.001). Viewing both Western and Arabic shows positively contributed to general internalization (β = .29, p ≤ .001; β = .14, p ≤ .05, respectively).

Nine multiple regressions were conducted to test the relationships between viewing Western and Arabic TV shows and nine dependent measures with the sample split by gender, i.e., responses from males and females were analyzed separately.

**Males.** First, the model with the two TV show viewing variables and appearance evaluation as a DV was significant, F(2,106)=3.42, p≤.05, with viewing both Western and Arabic shows explaining 6% (R²) of the variance in appearance evaluation although Arabic shows were not statistically significant on this variable (β = .27, n.s.; β = -.19, p =.07, respectively). The more male respondents viewed both types of shows, the less positively they evaluated their appearance. Second, viewing Western TV shows explained 7% (R²) of variance in self-classified weight (β = .25, p ≤ .05) when entered to the model by its own, (F(1,106)=7.94, p≤.05). Viewing Arabic TV shows added only 1% to the variance explained and was not significant (R² change, n.s.; F(2,106)=4.35, p≤.05). Viewing Western shows positively contributed to self-classified weight, while Arabic shows were not significant in this regard (β = .23, p ≤ .05; β = .09, n.s., respectively). Third, viewing Western TV shows explained 5% (R²) of variance in general internalization (β = .22, p ≤ .05) when entered to the model by its own, (F(1,105)=5.31, p≤.05); Viewing Arabic TV shows added 2% to the variance explained and so was not a significant factor (R² change, n.s.; F(2,105)=3.50, p≤.05). Viewing both Western and Arabic shows positively contributed to general internalization (β = .17, n.s.; β = .13, n.s., respectively).

**Females.** First, viewing Western TV shows explained 6% (R²) of variance in information (β = .25, p ≤ .05) when entered to the model by its own, (F(1,96)=6.28, p≤.05). Viewing Arabic TV shows added 8% to the variance explained (R² change, p≤.05; F(2,96)=7.99, p≤.001). Viewing both Western and Arabic shows positively contributed to information (β = .20, p ≤ .05; β = .29, p ≤ .05, respectively). Second, viewing Western TV shows explained 6% (R²) of variance in pressure (β = .24, p ≤ .05) when entered to the model by its own, (F(1,96)=5.84, p≤.05). Viewing Arabic TV shows added less than 1% to the variance explained and was not a significant agent (R² change, n.s.; F(2,96)=3.14, p≤.05). Viewing Western positively contributed to pressure with Arabic shows having negligible effect in this area (β = .23, p ≤ .05; β = .07, n.s., respectively). Third, viewing Western TV shows explained 11% (R²) of variance in general internalization (β = .33, p ≤ .001) when entered to the model by its own, (F(1,96)=11.46, p≤.001). Viewing Arabic TV shows added 2% to the variance explained and so was not a significant variable (R² change, n.s.; F(2,96)=6.95, p≤.05). Viewing both Western shows positively contributed to general internalization but Arabic show viewing was not significant (β = .30, p ≤ .05; β = .15, n.s., respectively).

Finally, nine multiple regressions were run separately for male and female respondents to test the relationships between viewing TV shows with skinny prominent characters and viewing TV shows with characters who have average body types as IVs and appearance orientation, appearance evaluation, overweight preoccupation, self-classified weight, body area satisfaction, general internalization, internalization from watching athletes, pressures felt from aesthetic ideals, and information as DVS.

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**Males.** First, viewing TV shows with skinny characters explained 6% ($R^2$) of variance in appearance evaluation ($\beta = -.25, p \leq .05$) when entered to the model by its own, $F(1,113)=7.57, p \leq .05$. The model with the two TV show viewing variables (viewing TV shows with skinny characters and viewing TV shows with average body characters) and appearance evaluation as a DV was significant, as well, $F(2,113)=4.02, p \leq .05$, with viewing TV shows with average body characters explaining extra .04% ($R^2$) of the variance in appearance evaluation ($\beta = -.21, p \leq .05$ for skinny; $\beta = -.08, n.s.$ for average). The more male respondents viewed both types of shows, but especially shows with skinny characters, the less positively they evaluated their appearance. Second, viewing shows with skinny characters positively contributed to overweight preoccupation ($\beta = .19, p \leq .05$), explaining 4% ($R^2$) of variance in the DV, $F(1,113)=4.18, p \leq .05$. Third, the model with the two TV show viewing variables (viewing TV shows with skinny characters and viewing TV shows with average body characters) and self-classified weight as a DV was significant, $F(2,113)=4.50, p \leq .05$, with both IVs explaining 8% ($R^2$) of the variance in self-classified weight ($\beta = .03, n.s.$ for skinny; $\beta = .28, p \leq .05$ for average). Viewing TV shows, especially those with average-body-type characters, was positively associated with self-classified weight. Fourth, viewing shows with skinny characters was positively correlated with information ($\beta = .20, p \leq .05$), explaining 4% ($R^2$) of variance in the DV, $F(1,112)=4.43, p \leq .05$. Fifth, viewing shows with skinny characters explained 8% ($R^2$) of variance in pressure ($\beta = .29, p \leq .05$) when entered to the model by its own, $F(1,112)=9.32, p \leq .05$. Viewing shows with average characters added less than 1% to the variance explained ($R^2$ change, n.s.; $F(2,112)=4.66, p \leq .05$). Viewing both types of shows, but especially, shows with skinny characters, positively contributed to pressure ($\beta = .26, p \leq .05$ for skinny; $\beta = .03, n.s.$ for average). Sixth, viewing shows with skinny characters explained 7% ($R^2$) of variance in general internalization ($\beta = .27, p \leq .05$) when entered to the model by its own, $F(1,112)=8.64, p \leq .05$. Viewing shows with average body characters added less than 1% to the variance explained ($R^2$ change, n.s.; $F(2,112)=4.37, p \leq .05$). Viewing both types of shows, but especially shows with skinny characters, positively contributed to general internalization ($\beta = .25, p \leq .05$ for skinny; $\beta = .04, n.s.$ for average).

**Females.** First, viewing shows with skinny characters positively contributed to overweight preoccupation ($\beta = .21, p \leq .05$), explaining 4% ($R^2$) of variance in the DV, $F(1,111)=5.12, p \leq .05$. Second, viewing shows with skinny characters explained 9% ($R^2$) of variance in information ($\beta = .30, p \leq .001$) when entered to the model by its own, $F(1,111)=11.25, p \leq .001$. Viewing shows with average characters added extra 1% to the variance explained ($R^2$ change, n.s.; $F(2,111)=6.38, p \leq .05$). Viewing both types of shows are positively associated with information ($\beta = .19, n.s.$ for skinny; $\beta = .16, n.s.$ for average). Third, viewing shows with skinny characters explained 7% ($R^2$) of variance in pressure ($\beta = .27, p \leq .05$) when entered to the model by its own, $F(1,111)=8.74, p \leq .05$. Viewing shows with average characters added less than 1% to the variance explained ($R^2$ change, n.s.; $F(2,111)=4.36, p \leq .05$). Viewing both types of shows, but especially, shows with skinny characters, positively contributed to pressure ($\beta = .25, p = .07$ for skinny; $\beta = .03, n.s.$ for average). Fourth, viewing shows with skinny characters explained 10% ($R^2$) of variance in general internalization ($\beta = .32, p \leq .001$) when entered to the model by its own, $F(1,111)=12.74, p \leq .001$. Viewing shows with average body characters added another 3% to the variance explained ($R^2$ change, $p = .06$; $F(2,111)=8.35, p \leq .001$). Viewing both types of shows, but especially shows with average body characters, positively contributed to general internalization ($\beta = .14, n.s.$ for skinny; $\beta = .25, p = .06$ for average).
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Extinction of Species and its Management for Ecological Balance

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Abstract

Millions of biological species constitute the life on earth. New species have been regularly discovered. Around 8000 new species are identified each year. Preserving these species and their habitats from extinction is very important as the loss of the species can affect the biodiversity largely. This paper focuses on the extinction and loss of bio-diversity. This passage shows how extinction has become a threat to losing the biological richness. The major causes of the extinction of species were discussed as overexploitation, pollution, habitat degradation, deforestation, introduced species, invasive species, global warming, disease eradication, co-extinction of a species etc. Managing the loss of species is analyzed with mainly selective breeding and cloning. Again the history of extinction, effects of extinction and managing the loss of species are discussed.

Keywords: Extinction and loss of bio-diversity - The History of Extinction - Threats Causing Extinction - Effects of extinction - Managing the loss of species.

Introduction

Millions of biological species constitute the life on earth. The variety of life on Earth and its biological diversity is commonly referred to as ‘biodiversity’. The United Nations declared the year 2010 as the International Year of Biodiversity. New species have been regularly discovered. Around 8000 new species are identified each year. Most of these newly identified species have not yet classified. It is said that nearly 90% of all arthropods are not yet classified. Most of these species are newly formed ones due to mutation. These newly formed species help in maintaining biodiversity as so many species are getting extinct each year. So, modern biodiversity may not be much different from biodiversity 300 million years ago.

India, Brazil, Colombia, Ecuador, Peru, Mexico, Madagascar, Zaire, Australia, China, Indonesia and Malaysia are the twelve mega biodiversities in the world. These countries contain most of the species population.

Preserving these species and their habitats from extinction is very important as the loss of the species can affect the biodiversity largely.

Extinction and loss of bio-diversity

Human intervention has led to imbalance in the ecological diversity. Extinction refers to the complete end of a species. Species become extinct when they are no longer able to survive in changing conditions or against superior competition. It is said that a typical species becomes extinct
within a million years of its first appearance. About 99.9% of all species that have ever lived are now extinct. Prior to dispersion of humans across the earth, extinction generally occurred at a continuous low rate. But now it is accelerated by human intervention. Now, around 140,000 species get extinct each year. This figure indicates unsustainable ecological practices, as only a small number of species evolve each year.

Biologist E. O. Wilson estimated that if current rates of human destruction of the biosphere continue, one half of all species of life on earth will be extinct by 2100. 30% of all natural species will be extinct by 2050. He further said that extinctions are occurring about 100 times higher than before.

The History of Extinction

Biodev-ersity, the result of 3.5 billion years of evolution, consisted of protozoan and single - celled organisms until 600 million years ago. The growth in the population of species during the starting of the Phanerozoic (540 million years ago) is very rapid. Over the last 100 million years, global diversity showed little overall trend, but was marked by massive losses of diversity classified as mass extinction events.

The period since the emergence of humans has shown a steep reduction in biodiversity. This reduction is named the Holocene extinction. It is caused due to the destruction of the species’ habitat.

The International Union for Conservation of Nature (IUCN) says that there has been at least five mass extinctions in the history of life on earth, and four in the last 3.5 billion years in which many species have disappeared in a relatively short period time.

The Cretaceous–Tertiary extinction event which took place 65 million years is known to have wiped out the non-avian dinosaurs, among many other species. A massive eruptive event is considered to be the cause of the "Great Dying" about 250 million years ago, which is estimated to have killed 90% of species existing at the time. The dinosaur extinction took place 65 million years ago wiping out most of the dinosaur species. The Permian extinction of 245 million years ago wiped out 96% of all marine species.

Threats Causing Extinction

The list of the causes that can contribute directly or indirectly to the extinction of a species is endless. Any species that is unable to survive or reproduce in its environment, and is also unable to move to a new environment where it can do so, dies out and becomes extinct. Extinction of a species may come suddenly a species loses out in competition for food to better adapted competitors.

Among many reasons, Humans contribute the maximum to extinction through over harvesting, habitat destruction, loss and fragmentation, over exploitation, Pollution, Invasive alien species, introduction of new predators and food competitors, over hunting, Co-extinction and other

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influences. Explosive, unsustainable human population growth is an essential cause of the extinction crisis. The major causes of the extinction of species are discussed below.

**Overexploitation** refers to the hunting which is done at a rate above the maximum sustainable yield. If the number of individuals that are hunted are higher than the number of individuals that will be born, the population will decline. About 25% of world fisheries are now overexploited.

**Pollution** destroys the purity of the biodiversity by making the habitats of species unfit. It is one of the major reasons for the mass death of many species. Pollution may also poison the species directly.

**Habitat degradation** is the main cause of species extinctions. Destruction of ocean floors by bottom trawling and pollution destroy the originality of the habitats. The degradation of a species' habitat may alter the fitness landscape to such an extent that the species is no longer able to survive and becomes extinct.

**Deforestation** is partially linked to the previous point. Increased human encroachment upon wild areas, increased resource extraction destroys the habitat of the species. Around half of the original forests have disappeared, and they are still being removed at the rate of 10% higher than any possible level of regrowth.

**Introduced species** are the next threat. Humans have been transporting animals and plants from one part of the world to another, sometimes deliberately and sometimes accidentally. *Invasive species* can affect native species directly by eating them, competing with them, and introducing pathogens or parasites that sicken them or degrade their habitat.

**Global warming** affects the ecosystem largely. The species which is not capable of adapting to the new climate gets extinct.

**Disease eradication** process has prompted humans to work towards the extinction of many species of viruses and bacteria.

**Co extinction of a species** is the loss of one species due to the extinction of another. The extinction of one species' wild population can often have knock-on effects, causing further extinctions. It is referred to as chains of extinction. If any one species is removed from the ecosystem, the cycle can break down, and the community may become dominated by a single species.

**Effects of extinction**

Firstly, when an species becomes extinct, the food chain gets disrupted. This may affect the other organisms in the food chain and even lead to the extinction of other species. As discussed earlier, we call this ‘the chains of extinction’. Sometimes, due to disruption in ecosystem due to extinction, the nutrient cycles affected. In some ecosystems, single species may account for up to 50% of recycled nutrients. However, species that heavily recycle N are not always the same ones that recycle the most phosphorus. In some special cases, the surviving species may be able to compensate for lost species by increasing their
roles in nutrient recycling. The Bio diversity is completely uprooted and the other species population will be greatly affected. Extinction of many edible and medicinal species can be considered as a huge loss to humanity. Many such valuable herbs and animals have become extinct.

Managing the loss of species

Selective breeding is a method used by scientists to create domestic animals with the characters they need. All the domestic animals have their wild ancestors. The wolf became the dog, the wild boar became the pig, the aurochs became the domestic cattle, the tarpan became the horse, etc. People bred the animals that had the characteristics that they needed. In this way, some of the wild ancestors have completely disappeared from earth, such as aurochs and the tarpans. In the selective breeding experiment, the scientists have tried to recreate the wild ancestors such as the aurochs and the tarpan. This can be done to bring back the wild breed of animal that has become extinct or is in the verge of becoming extinct.

Cloning is used to revive animals by using its DNA from the remains of an extinct species, through the process of cloning, the species can be "brought back to life". In order for such a program to succeed, a sufficient number of individuals will be cloned from the DNA of different individuals to create a viable population. Though bioethical and philosophical objections have been raised, the cloning of extinct creatures seems a viable outcome of the continuing advancements in science and technology.

Many times, some species are wrongly judged as extinct. About one-third of the mammals declared extinct have been rediscovered within few years.

 Mostly, the loss of a species is compensated by another species. The substitute make up the absence of the extinct species.

For easy proliferation of the endangered species, the governments must set a higher bar for critically endangered species. The will prove helpful to the scientists involved in breeding.

Afforestation must be promoted. Though there is no substitute for undisturbed forests, we can try our best to create a close-to-natural habitat for the endangered species. When deforestation is checked and over fishing is stopped, most of the endangered species can be removed from that list.

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Motive for Using Specific Health Care Practices in Kathmandu Metropolitan City

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Abstract

This cross sectional analytical study tries to identify the reasons which motivate people to use specific health care practices and assess the relationship of factors affecting the health service utilization pattern on use of health services in Kathmandu Metropolitan City. The data for this study is collected from the Kathmandu Metropolitan City. A representative and random sample of 500 household is taken, using multistage sampling, with the probability of selection of study area proportional to their size. Data are collected with the help of semi-structured questionnaire and analyzed with SPSS13.0. Results are obtained by the frequency distribution and cross tabulation of the variables. Chi-square tests and logistic regression are run. Result suggests that families seek different types of providers for contrasting reasons and at varying stages of illness. Quality of care, severity/ nature of illness, belief in specific health care practices, income and service price all are significant in the choice of health care provider. Distance factor seems to be a trivial factor in the choice of health care provider. Cost of care is important but is not an overwhelming factor in the choice of modern health care provider.

Keyword: Health seeking behavior, motive, reasons, health care practices

Introduction

Review of the global literature suggests that the utilization of health services is likely to depend on variety of demand factors and are classified as socio-demographic status, physical and financial accessibility, cultural beliefs and perceptions, social norms and traditions, women's autonomy, economic conditions, disease pattern and health service issues like cost of and access to care, and the quality and appropriateness of the services provided (Katung, 2001; Uchudi, 2001; Navaneetham & Dharmalingam, 2002; Fatimi, & Avan, 2002; Stephenson & Hennink, 2004). Strategic policy formation in all health care systems should be based on information related to health seeking behaviour and the factors determining these behaviours. This cross sectional analytical study tries to identify the reasons which motivate people to use specific health care practices and assess the relationship of factors affecting the health service utilization pattern on use of health services in Kathmandu Metropolitan City.

Materials and Methods

Cross sectional descriptive and analytical study. The data for this study is collected from the Kathmandu Metropolitan City (KMN). A representative and random sample of 500 household is taken, using multistage sampling, with the probability of selection of study area proportional to their size. Considering the multi-stage sampling, in this study KMN is divided into a number of sectors as cluster in the first-stage within each such sector a number of wards are selected in the
second-stage, and from each selected wards a number of households are selected at the third-stage for enquiry. A sample of these is selected at a random with probability proportionate to size.

**Statistical tools and software used**

Both quantitative and qualitative data are collected from the fieldwork with the help of semi-structured questionnaire and focus group discussion. All the collected quantitative data are entered into SPSS database and analyzed with SPSS13.0. Results are obtained by the frequency distribution and cross tabulation of the variables. Chi-square tests are performed to determine the significant associations between the use of different methods and these variables. Logistic regression is run to measure the extent of likelihood of occurrences of events. Separate models are run to test the significance of reason on use of health care practices. Reason given by the users of traditional and modern health care practices are compared to the reason given by the users of integrative (both) types of health care practices Results are discussed by looking at the odds ratio which is the exponent of the coefficient of the regression estimates and takes a value between zero and infinite.

**Results**

It is found that, 22% people tend to prefer to go to traditional health care provider, 40.8% people sought care from the modern health care services. Meanwhile 37.2 % of them may at the same time sought care from the both traditional as well as modern health care provider. Both treatments are used generally in tandem to ensure prompt cures. It is found that, even the same respondents use different health services for different ailments. In this study, respondents, who use to visit traditional health care provider for their health problem, are asked to give the most important reasons for selecting them.

Out of the 110 respondents who follow traditional health care practice, 80.9 % appraise quality of care as the most important reason for choosing a particular provider. Besides this, 69.1 % respondents said that they have faith in traditional health care, 62.7% said that it depends upon the severity or nature of illness. Factors apart from costs that militate against particular treatment are the previous experience (52.7%) and they are cost-effective (41.8%). Thirty three percent respondents are also alienated by the decision of household head. These factors create great obstacles against the more regular use of modern medical treatment. The respondents said that quality and severity of illness are significant in the choice of modern health care providers and that price and distance matter but are not the most important factors. People’s income, service price, and distance all influence selections, but much less than had been believed. Factors causing people to use modern types of treatment are the desire to obtain quick recovery (17.2%) and the belief (55.9%).
Table 1: Reason behind the acceptance of specific method of health care

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Total</th>
<th>p value</th>
<th>Preferred treatment method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. (%)</td>
<td></td>
<td>Traditional 110 (22.0%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Modern 204 (40.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Both 186 (37.2%)</td>
</tr>
<tr>
<td>Severity / nature of illness</td>
<td>327 (65.4)</td>
<td>.657</td>
<td>69 (62.7)</td>
</tr>
<tr>
<td>Quality of care</td>
<td>346 (69.2)</td>
<td>.007</td>
<td>89 (80.9)</td>
</tr>
<tr>
<td>Belief in particular health care</td>
<td>318 (63.6)</td>
<td>.012</td>
<td>76 (69.1)</td>
</tr>
<tr>
<td>Past experience</td>
<td>206 (41.2)</td>
<td>.000</td>
<td>58 (52.7)</td>
</tr>
<tr>
<td>Advice from relatives/friends</td>
<td>209 (41.8)</td>
<td>.001</td>
<td>56 (50.9)</td>
</tr>
<tr>
<td>Near home</td>
<td>128 (25.6)</td>
<td>.184</td>
<td>22 (20)</td>
</tr>
<tr>
<td>Decision of household head</td>
<td>165 (33)</td>
<td>.000</td>
<td>47 (42.7)</td>
</tr>
<tr>
<td>Complementary</td>
<td>114 (22.8)</td>
<td>.614</td>
<td>26 (23.6)</td>
</tr>
<tr>
<td>No side-effect</td>
<td>162 (32.4)</td>
<td>.000</td>
<td>54 (49.1)</td>
</tr>
<tr>
<td>Inexpensive</td>
<td>155 (31)</td>
<td>.000</td>
<td>46 (41.8)</td>
</tr>
<tr>
<td>Custom</td>
<td>144 (28.8)</td>
<td>.000</td>
<td>51 (46.4)</td>
</tr>
<tr>
<td>Only medicine does not work</td>
<td>136 (27.2)</td>
<td>.000</td>
<td>70 (63.6)</td>
</tr>
<tr>
<td>Provide treatment at home</td>
<td>85 (17)</td>
<td>.000</td>
<td>43 (39.1)</td>
</tr>
<tr>
<td>Modern</td>
<td>180 (36)</td>
<td>.000</td>
<td>95 (46.6)</td>
</tr>
<tr>
<td>Fast relief</td>
<td>90 (18)</td>
<td>.000</td>
<td>35 (17.2)</td>
</tr>
</tbody>
</table>

* Multiple responses

From the study area hospitals are the most approachable but 22% respondents does not sought care at these facilities. People (40.8%) in general use modern treatment first even though they believe it causes side-effects. People try to use more than one type of treatment to ensure that they complement one another. Indeed, 24.5% respondents regard modern health care and 23.6% respondents consider traditional health care as complementary to each other. Belief in particular health care method and cost-effective is highly responded reason by the people of age group above 66, for using the traditional health-care services. More male and Brahmin as well as professional worker seek quality of care in choosing the health care method.

The dichotomous use of modern health care practices and various reasons for practicing is further analyzed using logistic regression. The dependent variable is coded 1 if the respondents have use modern health care practices and 0 if they had used both integrative traditional and modern health care practices. In case of variables like ‘custom’, ‘only medicine does not work’, ‘Provide treatment at home’, ‘Inexpensive’, ‘no side effect’, all of the respondents answered “no” hence these variables are not included in the analysis.

Table 2: Logistic regression estimates of the effect of reason for use of modern health care practices

<table>
<thead>
<tr>
<th>Reason for use of modern health care practices</th>
<th>p value</th>
<th>Odds ratio</th>
<th>95% C.I. for odds ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belief</td>
<td>.013</td>
<td>1.918</td>
<td>1.149 - 3.202</td>
</tr>
<tr>
<td>Near home</td>
<td>.457</td>
<td>1.225</td>
<td>.717 - 2.093</td>
</tr>
<tr>
<td>Past experience</td>
<td>.000</td>
<td>2.682</td>
<td>1.612 - 4.464</td>
</tr>
<tr>
<td>Advice from relatives/friends</td>
<td>.111</td>
<td>1.499</td>
<td>.912 - 2.465</td>
</tr>
<tr>
<td>Decision of household head</td>
<td>.000</td>
<td>9.916</td>
<td>5.534 - 17.767</td>
</tr>
<tr>
<td>Quality of care</td>
<td>.130</td>
<td>1.520</td>
<td>.885 - 2.613</td>
</tr>
</tbody>
</table>
 Severity / nature of illness  |   .383  |   1.267  |   .744  |   2.156  
 Complementary                |   .313  |   1.358  |   .750  |   2.459  
 Modern                       |   .747  |   1.083  |   .667  |   1.759  
 Fast relief                   |   .001  |   2.668  |  1.470  |   4.842  
 Constant                     |   .000  |   .017   |  43.00  |  40.425  

Omnibus Tests of Model Coefficients indicate that overall prediction is significant for this model ($\chi^2 = 122.791$, $p<0.001$). Model summary shows -2 Log likelihood is 417.033 and is extremely good model for prediction and Nagelkerke R Square shows that only 36.0% of variation in outcome variable is explained by this model. Hosmer and Lemeshow test shows that model fits the data well ($\chi^2 = 5.268$, $p=0.729$) since it produces insignificant chi square. The model is better in predicting modern health care practices (83.3%) as compared to both (63.4%).

Results from logistic regression shows that the likelihood of using modern health care practices by the people who give belief / faith in particular health care practices as a main cause is found significantly 1.918 times higher as compared to the people who didn’t give such type of reason ($p=0.013$). Similarly, using modern health care practices is significantly 9.916 times higher among the respondents who give the reason that the use of particular health care practices depends upon the decision of household head ($p<.0001$). Probability of using modern medicine is significantly 2.668 higher in the people who give fast relief as the most important reason ($p=.001$). It is found that practice of modern medicine is 1.520 times higher in the people who seek quality of care. However, it is insignificant ($p= 0.130$). Usage of modern medicine is found significantly 2.682 times higher in the people who give ‘past experience’ as the reason for using it ($p<.0001$).

The use of traditional health care practices and various reasons for practicing is further analyzed using logistic regression. The dependent variable is coded 1 if the respondents have use traditional health care practices and 0 if they had used both integrative traditional and modern health care practices. For those people who prefer traditional medicine, in case of ‘modern’ and ‘fast relief’ variables there are less than two levels of responses, hence excluded from the analysis.

**Table 3: Logistic regression estimates of the effect of reason for use of traditional health care practices**

<table>
<thead>
<tr>
<th>Reason for use of traditional health care practices</th>
<th>p value</th>
<th>Odds ratio</th>
<th>95% C.I. for odds ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Belief</td>
<td>.694</td>
<td>1.126</td>
<td>623</td>
</tr>
<tr>
<td>Near home</td>
<td>.078</td>
<td>.566</td>
<td>.300</td>
</tr>
<tr>
<td>Past experience</td>
<td>.418</td>
<td>1.250</td>
<td>.728</td>
</tr>
<tr>
<td>Advice from relatives/ friends</td>
<td>.440</td>
<td>1.234</td>
<td>.723</td>
</tr>
<tr>
<td>Provide treatment at home also</td>
<td>.001</td>
<td>2.817</td>
<td>1.571</td>
</tr>
<tr>
<td>No side effect</td>
<td>.026</td>
<td>.532</td>
<td>.306</td>
</tr>
<tr>
<td>Inexpensive</td>
<td>.005</td>
<td>.463</td>
<td>.271</td>
</tr>
<tr>
<td>Decision of household head</td>
<td>.120</td>
<td>.655</td>
<td>.384</td>
</tr>
<tr>
<td>Custom</td>
<td>.585</td>
<td>.863</td>
<td>.508</td>
</tr>
<tr>
<td>Quality of care</td>
<td>.032</td>
<td>1.999</td>
<td>1.059</td>
</tr>
<tr>
<td>Only medicine does not work</td>
<td>.000</td>
<td>3.717</td>
<td>2.145</td>
</tr>
<tr>
<td>Severity / nature of illness</td>
<td>.857</td>
<td>1.054</td>
<td>.593</td>
</tr>
<tr>
<td>Complementary</td>
<td>.461</td>
<td>1.281</td>
<td>.663</td>
</tr>
<tr>
<td>Constant</td>
<td>.024</td>
<td>.281</td>
<td>42.70</td>
</tr>
</tbody>
</table>

Omnibus Tests of Model Coefficients indicate that overall prediction is significant for this model ($\chi^2 = 59.144$, $p<0.001$). Model summary shows -2 Log likelihood is 331.465 and is extremely
good model for prediction and Nagelkerke R Square shows that only 24.7% of variation in outcome variable is explained by this model. Hosmer and Lemeshow test shows that model fits the data well ($\chi^2 = 7.642, p=0.469$) since it produces insignificant chi square. The model is better in predicting both types of health care practices (83.3%) as compared to traditional (54.5%).

Results from logistic regression shows that the likelihood of using traditional health care practices by the people who give use of traditional health care practices depends upon the decision of household head as a main reason is found less as compared to the people who didn't give such type of reason and it is insignificant ($p=0.120$). The probability of using traditional health care practices by the people who give belief / faith in particular health care practices as a main cause is found 1.126 times higher as compared to the people who didn't give such type of reason. However, it is insignificant ($p=0.694$). Likewise, using traditional health care practices is significantly 3.717 times higher among the respondents who give the reason that medicine alone does not work for them ($p<.001$). Odds of using traditional medicine is 1.054 times higher in the people who give severity / nature of illness as the most important reason ($p= .857$). It is found that practice of traditional medicine is significantly 1.999 times higher in the people who seek quality of care ($p= .032$). Usage of traditional medicine is found less likely in people who said that traditional medicine is cost effective and there are less chances of having side effect by the medication provided by its practitioners. However it is statistically significant ($p= .005, p= .026$).

The most significant findings, however, are related to the importance of the nature of disease and quality of care on peoples’ choice of provider. It is found that when, high quality care is important to successful handling of a disease, people give belief as the primary reason for selecting a health care provider. The majority of people surveyed sought treatment beyond the closest and cheapest government health care services. This indicates that distance to quality health care providers is not as important in choice of health care providers.

Discussion

The reasons for use of traditional and modern health care differed with age, sex, caste, religion, occupation, marital status, education and income. User’s perceptions are shaped by their cultural values, previous experiences, time expend to seek treatment, household size and income, distance and cost of health care.

The type of symptoms experienced for the illness and the number of days of illness are major determinants of choice of health care provider. Furthermore, the attitude of the health provider and patient satisfaction with the treatment play a role in choice of provider. Peoples are generally more likely to use low cost services. Some study stated that low costs and proximity of services are the two most important factors that attracted people towards particular services (Ndhlovu, 1995). Other studies have shown that, rather than prices, it is indeed the quality of services provided that has a large effect on the choice of health care providers (Litvack & Bodart, 1993; Chawla & Ellis, 2000; Mariko 2003; Sahn et al., 2003). Features of the service outlet and self-belief in the service provider also play a major role in decision making about the choice of particular healthcare method (Newman et al., 1998; Ndymugyenyi et al., 1998; Sadiq & Muynck, 2002).

A number of studies in Nepal have shown that person seek different types of healers based on their perception and beliefs regarding the illness problems, which in turn are influenced and defined by their social surrounding and network of relationships (Subedi, 1988). These factors result in delay in treatment seeking and are more common amongst women, not only for their own health but especially for children’s illnesses (De Zoysa et al., 1984; Kaona et al., 1990; McNee et al., 1995; Nakagawa et al., 2001; Thakur, 2002). Cultural beliefs and practices often lead to self-care, home
remedies and consultation with traditional healers (Nyamongo, 2002). Some of the cultural issues are family dynamics which may mean people cannot easily attend or take up services without the support of family members. Advice of the elder women in the house is also very instrumental and cannot be ignored (Delgado et al., 1994). This study result also depicts that peoples (42.7%) are also alienated by the decision of household head. However, cultural practices and beliefs have been prevalent regardless of age, socio-economic status of the family and level of education (Stuyft et al., 1996; Perez-Cuevas et al., 1996; Geissler et al., 2000). They also affect awareness and recognition of severity of illness, gender, availability of service and acceptability of service (Aday & Anderson, 1974).

Belief with aspects of care, particularly its dependence on medications, is an important part in people's motivation to follow traditional health care practices. Results also suggest that the modern health care systems lacks integration, differences in the quality of services and ignorance of social and spiritual dimensions, is also an important motivation for turning to traditional health care in this particular population which supports the results from the various studies (Marriot, 1955; Carstairs, 1965; Stone, 1976; Shrestha, 1979; Aryal, 1983; Young, 1989; Millar, 1997; Astin, 1998; Lyon, 1998).

Considerations of service quality and disease severity as well as nature of illness also dominate choice of traditional as well as modern method of health care. As quality of care increases people's choice probability also increases. Evidence from the literature suggests that quality of care (Larsen, 1976) and severity/nature of illness (Young, 1989; Niraula, 1994) are the most important factor in the choice of health care providers. This study also found that the majority of users appraise quality of care (69.2%) and severity/nature of illness (65.4%) as the most important reasons for choosing a particular provider. But the result contradicts the study by Justice (1981) in that she found the choice of traditional healers is probably because of other factors rather than the nature of illness.

Cost has undoubtedly been a major barrier in seeking appropriate health care. Inclined to differential degree of use of different health care practices and important factors accepting behind such practice are found faith and costs of treatment. Most respondents have said that price is important determinants of the choice of health provider. Previous studies have also shown that price, income, and distance are important determinants of the choice of health provider (Paneru et al., 1980; Aryal, 1983; Akin et al., 1986; Sauerborn et al., 1989; Niraula, 1994; Bhuiya et al., 1995; Tembon, 1996; Noorali et al., 1999; Islam, & Tahir, 2002). Similarly in this study also near about half respondents said that they use traditional methods because they think that it is cost-effective. Alike to various study (Aryal, 1983; Young, 1989; Sauerborn et al., 1989; Miller, 1997; UNICEF, 2001; Subba, 2004) results from this study also suggest that modern health care method is costly. To the respondents cost means not only the consultation fee or the expenses incurred on medicines but also the cost spent to reach the provider and that's why the total amount spent for treatment turns out to be huge.

Availability of the transport, physical distance of the facility and time taken to reach the facility definitely influence the health seeking behaviour and health services utilization (Moazam & Lakahani, 1990). The effect of distance on service use becomes stronger when combined with the scarcity of transportation and with impoverished roads, which contributes towards increase costs of visits (Sauerborn et al., 1989; Kleinman, 1991; Bhuiya et al., 1995; Noorali et al., 1999; Islam & Tahir, 2002). The respondents said that quality and severity of illness are significant in the choice of health care providers and that price and distance matter but are not the most important factors. This study results support the conclusion of Akin et. al., (1986) in that it is said; while distance is an important determinant of health provider choice it is not as important as has been believed. The reasons patients give for choosing a particular health provider are the best predictor of their decisions. Thus distance factor doesn't play a major role in seeking the health care. These findings don't support
the result of the UNICEF (2001) study of Patan Hospital where it is found that the longer the distance the lower the number of the patients at the hospital. It also contradicts with the findings by Niraula (1994) where he identify that people who are close to the roads, where the health post is located, are found to seek modern treatment more than people who are far away.

More startling is the finding that 63.6% of individuals who utilize traditional health care believed that only medicine in the form of tablet would not work in their health problem. They have found little or no relief from modern medical interventions. These data are contrary to a previous observation that CAM users are not, in general, dissatisfied with conventional medicine (Astin, 1998). But for modern health care users, as Pigg (1995) also noted, use of modern health care is connoted with the modernity, social status and social class.

Conclusion

The health seeking behavior is complex and has multiple factors responsible for people's choice of health care practices. Result suggests that families seek different types of providers for contrasting reasons and at varying stages of illness. Quality of care, severity/ nature of illness, belief in specific health care practices, income and service price all are significant in the choice of health care provider. The most significant findings, however, are related to the importance of the nature of disease and quality of care on peoples' choice of provider. Yet the finding is not new this finding holds in both traditional and modern health care. Distance factor seems to be a trivial factor in the choice of health care provider. People who are seriously ill seek hospitals despite great distances and cost. The majority of people surveyed sought treatment beyond the closest and cheapest government health care services. This indicates that distance to quality health care providers is not as important in choice of health care providers. Cost of care is important but is not an overwhelming factor in the choice of modern health care provider. Respondents say that price is important, but only when they are suffering from diseases they do not believe require high levels of quality. All respondents seek the highest quality of care available when quality is important.

References


Measuring Service Quality in Ethiopian Airlines

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Abstract
The aim of this paper is to investigate the relationship between airline service quality, passengers’ satisfaction and loyalty towards Ethiopian Airlines. SERVQUAL model was used to measure the perceptions and expectations of passengers’ on the services received from Ethiopian Airlines. The five dimensions of SERVQUAL, i.e. reliability, assurance, tangibility, empathy and responsiveness were used to measure the service quality of Ethiopian Airlines. Through the identification of 21 service quality indicators a questionnaire containing 47 items was developed. According to the findings of this study, the passengers were dissatisfied with all five dimensions of service quality. The most dissatisfied dimension was reliability with the highest service gap score. Three dimensions i.e. tangibles, assurance and reliability of service quality positively affected the passengers’ level of satisfaction and among those dimensions, assurance has the strongest effect on the level of customers’ satisfaction. It was also indicated that passenger satisfaction plays an important role in enhancing passenger loyalty. The findings of this study will help Ethiopian Airlines to redefine their marketing strategy to one that is customer-focused and emphasizes on service quality. It will also be important for other African Airlines to identify the dimension of service quality most preferred by the passengers’.

Keywords: Service quality, Passengers’ Loyalty, Satisfaction, Airline, SERVQUAL

Introduction
Deregulation and liberalization in the airline industry transformed the industry into fastest growing and competitive market. This led to the emergence of a variety of new entrants into the airline industry. These factors created a new management challenge for Airlines. In early periods, price leadership strategy called Low Cost Carriers (LCCs) was used by airlines to tackle the challenge. In recent years airline service quality has assumed greater importance and viewed as an important part of competitive strategy (Tiernan, 2008). Currently, service quality has become the most important factor for the success and survival in airline industry. It is a key differentiator between the competing airlines. It is especially very critical in a highly competitive environment such as that of the Ethiopian Airlines operating environment. Furthermore, delivering high quality airline services can help in meeting several requirements such as customer satisfaction, customer loyalty, market share, soliciting new customers, improved productivity, financial performance and profitability (Llosa et al., 1998).

The purpose of this study is to assess the level of service quality offered by Ethiopian Airlines. It also tries to investigate the impact of service quality on passengers’ satisfaction as well as the relationship between satisfaction of passengers’ and their loyalty to create a long term commitment with Ethiopian Airlines.
Theoretical Background

Research into airline service quality has increased rapidly since its relationship with passenger satisfaction and profitability has been established (Heskett et al., 1994). Much of the literature suggests that airline passengers perceive service quality as a multi-dimensional construct, which is in accordance with the conception of service quality proposed by Parasuraman et al. (1988) in their well-known service-quality measuring instrument called SERVQUAL. According to the SERVQUAL model (Parasuraman et al., 1988), service quality can be measured by identifying the gaps between customers’ expectations of the service to be rendered and their perceptions of the actual performance of the service.

To achieve a high level of customer satisfaction, most researchers suggest that a high level of service quality should be delivered by the service provider as service quality is normally considered an antecedent of customer satisfaction. As service quality improves, the probability of customer satisfaction increases (Clemes, 2008). This will lead to loyal and committed customers (Reichheld, 1996) (Cronin and Taylor 1992).

Research Hypotheses

The hypotheses to be tested in this study are given below as:

**H1.** There is a significant difference between passenger expectation and their perceptions of service quality offered by Ethiopian Airlines

**H2.** There is a significant relationship between perceived service quality provided by Ethiopian Airlines and passenger satisfaction

**H3.** There is a positive relationship between passenger satisfaction and their loyalty in Ethiopian Airlines

Methods and Procedures

In this study both primary and secondary sources of data were used to collect the needed information from the sources. The primary data were collected through administrating questionnaire from selected passengers. In order to get the answer for questions, 110 questionnaires were distributed to 110 passengers of Ethiopian Airlines. Because some customers may not master the English language, the questionnaire was designed in two versions, Amharic and English. The targeted population includes customers of Ethiopian Airlines located in Addis Ababa. The questionnaire was distributed to passengers waiting to travel and arrived from different location using Bole International Airport. From the 110 questionnaires, 99 responses were received. The data provided were then examined. The screening process resulted in excluding 5 responses from the study because of missing data items. The remaining responses 94 represent an effective response rate of around 86 percent of the total sample.

The questionnaire has four sections consisting of 54 questions. The first part of the questionnaire consists of issues related to the personal information of the respondent. It included the age, gender, educational background and travel history of the respondents. The second part was concerned with the questions used to assess service quality in Ethiopian Airlines. The research instrument design is based on the five dimensions of service quality and the 22 service items of the SERVQUAL model. The developed questionnaire includes four items correspond to the tangibles dimension; five items correspond to the reliability dimension, four items correspond to the assurance dimensions, four items to the responsiveness and four items to empathy. Respondents
were asked to indicate their degree of agreement with each of the items on a seven-point Likert scale. It has also two parts containing perception and expectation of passengers towards the service provided. Passengers were required to express their agreement by encircling from number one (if they strongly disagree) to number seven (if they strongly agree).

Studies on customer satisfaction with services have traditionally measured using single item measures. In this study, passenger’s satisfaction was measured using one item that captures overall satisfaction on service offered by Ethiopian Airlines. It was measured using a seven-point Likert scale (1-strongly disagree to 7-strongly agree). Passenger’s loyalty comprised four items adapted from Zeithaml et al. (1996). It comprised of questions that can be used to measure the passengers’ willingness to recommend to other people, their future commitment and intention of repurchase. It was also measured using a seven-point Likert scale (1-strongly disagree to 7-strongly agree). The populations of this study comprised of passengers’ who used Ethiopian Airline to travel from one location to another i.e. domestic or international. This study used non-probabilistic sampling technique to select respondents among the total population. The passengers were picked using convenience sampling from domestic and international flights during one week at Bole international Airport from May 2–9. The total numbers of respondents are 110.

After collecting the data from the respondents, the researcher used various quantitative methods to analyze the data. The data collected was edited, coded, tabulated, and presented for analysis. After calculating the mean score value for expectations and perceptions of service quality, a so-called “gap score” (G) is then calculated as the difference between the “perception-of-performance” score (P) and the “expectations score” (E). To test the existence of significance difference between expectations and perceptions paired sample t-test is used. Paired t-test is a way of to test for comparing two related samples (Kothari, 2007). In this study, the paired-samples t test is used to compare the means score values for expectations and perceptions of service quality dimensions. As, this study attempts to find the effects of the independent variables on the dependent variables multiple regressions is used to test the effect of service quality on passengers satisfaction, and passengers satisfaction on their loyalty. The quantitative data analysis was made by using computer software called SPSS.

Results

Demographic Characteristics of the Respondents

From the respondent, 67 percent of them are male and the remaining 33 percent are females. Accordingly, majority of the respondents lie between ages 30 and 40 constituting 43.6 percent of the respondents. 34 percent of the respondents are from 18 to 29, 6.4 percent are from 41 to 60, and the remaining 4.3 percent are above 60 years old. The educational qualification for the majority of the respondents’ is above first degree. Respondents below secondary school education constitute 8.5 percent of the whole respondents, 16 percent of them belongs to diploma, first degree and second degree and above comprise 39.4% and 36.2% respectively. There are passengers who use Ethiopian Airlines for local flight, international flight, and both flights. Accordingly, 12.8 percent of the respondents use the domestic flight, 54.3 percent are international flight passengers and the remaining 33 percent use both domestic and international flights.
Expectations of Service Quality

The responses to questions about expectations provide an idea of the relative importance of a service quality dimensions. Table 1 displays the expectations of service quality mean score values for Ethiopian Airlines and their relative importance as compared to other dimensions.

Table 1 Mean scores of expectations and their relative importance

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Mean Scores</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangibles</td>
<td>6.3750</td>
<td>4</td>
</tr>
<tr>
<td>Reliability</td>
<td>6.7766</td>
<td>1</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>6.3856</td>
<td>3</td>
</tr>
<tr>
<td>Assurance</td>
<td>6.5904</td>
<td>2</td>
</tr>
<tr>
<td>Empathy</td>
<td>6.3021</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Own survey (2011)

As per the passengers’ response, reliability dimension ranked as the first important dimension among the five service quality dimensions with a mean score value of 6.7766. This result is consistent with the findings by Parasuraman et al. (1991) in their studies on other service firms. Studies conducted in India civil aviation industry context (Khan, 2008) and international context (Sultan et al., 2000) indicated reliability as the most important requirements of airline operations. The second important dimension is assurance, with the least important being the dimension empathy with a mean score value of 6.3021.

Perception of Service Quality

Table 2 indicates the perception of passengers on the service delivered by Ethiopian Airlines. According to Table 2, the tangible dimension of service quality is carried out superior to the other four dimensions with the mean score of 5.0346.

Table 2 Mean scores of perception and their relative importance

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Mean Score</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangibles</td>
<td>5.0346</td>
<td>1</td>
</tr>
<tr>
<td>Reliability</td>
<td>3.9872</td>
<td>5</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>4.2580</td>
<td>3</td>
</tr>
<tr>
<td>Assurance</td>
<td>4.8856</td>
<td>2</td>
</tr>
<tr>
<td>Empathy</td>
<td>4.0213</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Own survey (2011)

Perception for Ethiopian Airlines services are lowest for reliability with the mean score value of 3.9872. Empathy is the second lowest with a mean score value of 4.0213.

Service Gaps

As can be seen from Table 3, the mean service gap score for all values are negatives suggesting that there exists a gap between the respondents’ expectations of what the services of Ethiopian Airlines
should be and their perceptions of the service quality actually offered by Ethiopian Airlines in all dimensions of service quality.

### Table 4 Service Gap score values

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Gap (Perception – Expectation)</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangibles</td>
<td>-1.3404</td>
<td>13.361*</td>
</tr>
<tr>
<td>Reliability</td>
<td>-2.7894</td>
<td>23.305*</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>-2.1276</td>
<td>17.416*</td>
</tr>
<tr>
<td>Assurance</td>
<td>-1.7048</td>
<td>14.744*</td>
</tr>
<tr>
<td>Empathy</td>
<td>-2.2808</td>
<td>11.912*</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td><strong>-2.0486</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: Own survey (2011)  
*Significant at 0.05 levels

The overall service gap for Ethiopian Airlines rated by passengers was -2.0486. The deviations from the expectation of passengers vary amongst the five dimension of service quality. As per passengers’ perception the worst dimension of service quality is reliability followed by empathy, responsiveness, assurance and tangibles respectively. Unfortunately with 95% confidence level, the passengers of Ethiopian Airlines participated in this study are dissatisfied with the service which they receive. The t-values for all variables indicate expectations to be higher than perceptions, i.e. respondents’ dissatisfaction on all the five dimensions. Hence, hypothesis H1 is accepted.

### Service Quality and Passengers Satisfaction

In this study, to test the effects of the variables of customers' perceptions of service quality on the variable of level of customers' satisfaction, multiple regression analysis was used. Table 4 presents the regression results of the five service quality dimension of Ethiopian Airlines and passengers satisfaction.

### Table 4 Regression results of service quality and passengers' satisfaction

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-.504</td>
<td>.318</td>
<td>-1.584</td>
</tr>
<tr>
<td>Tangibles</td>
<td>.204</td>
<td>.088</td>
<td>2.307*</td>
</tr>
<tr>
<td>Reliability</td>
<td>.415</td>
<td>.114</td>
<td>3.630*</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>.020</td>
<td>.092</td>
<td>.220</td>
</tr>
<tr>
<td>Assurance</td>
<td>.427</td>
<td>.109</td>
<td>3.902*</td>
</tr>
<tr>
<td>Empathy</td>
<td>.030</td>
<td>.077</td>
<td>.393</td>
</tr>
</tbody>
</table>
| **R² = 0.832 Adjusted R² = 0.823**  
**F = 87.385**  |

Source: Own survey (2011)  
*Significant at 0.05 levels

The regression result in Table 4 indicates all service quality dimension (tangibles, reliability, responsiveness, assurance and empathy) combined significantly influence the satisfaction of passengers using Ethiopian Airlines. Therefore, H2 is accepted. The adjusted $R^2$ of 0.823 indicates 82.3 percent of variance in passengers’ satisfaction can be predicted by the service quality dimensions of Ethiopian Airlines.
The t-values in Table 5 indicates tangibles, reliability and assurance dimension of service quality have a significant influence on passengers’ satisfaction at 95% confidence level. Conversely, responsiveness and empathy dimension have no significant influence on passengers’ satisfaction in Ethiopian Airlines.

**Passenger Satisfaction and Loyalty**

Table 5 displays the relationship between passengers satisfaction with their loyalty to Ethiopian Airlines. In order to test their relationship multiple regressions is used at 95 percent confidence level. The overall satisfaction of Ethiopian Airlines passengers seems to have statistically significant and positive effect on their loyalty. The adjusted $R^2$ of 0.149 indicates that 14.9 percent of passengers’ satisfaction is associated with their loyalty. The positive significant coefficient suggests higher passengers’ satisfaction on Ethiopian Airlines service quality and the higher the loyalty of the passengers. Therefore, hypothesis H3 is supported.

**Table 5 Regression results of passengers’ satisfaction and loyalty**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2.285</td>
<td>0.622</td>
<td>3.670</td>
</tr>
<tr>
<td>Passengers' satisfaction</td>
<td>0.560</td>
<td>0.135</td>
<td>4.155</td>
</tr>
</tbody>
</table>

**Source:** Own survey (2011) *Significant at 0.05 levels*

The result of this study indicates, passenger satisfaction is not the sole determinant and predictor of passengers’ loyalty in Ethiopian Airlines. There are other variables that influence passenger loyalty better than passenger satisfaction, because the adjusted $R^2$ of 0.149 indicates 14.9 percent of variance in passenger loyalty can be predicted by the passenger satisfaction.

**Conclusion**

The high ranking of the reliability and assurance dimensions suggest passengers expect Ethiopian Airlines to perform the services as promised consistently and accurately. To them, providing service at convenient time and giving more personal attention to the passengers is not important when delivering the Airlines service rather the reliability of service that matter most. In order to fulfill the needs of passengers’, Ethiopian Airlines must make sure that services delivered are reliable at all times. Therefore, the center of attention should be on providing the service efficiently as promised consistently with knowledgeable employee capable of providing prompt attention to passengers’ specific needs. Moreover, there should be an increase in investment to create interesting travel environment through visually appealing equipments. Providing variety of in-flight entertainment facilities better than the current level is also indispensable.
The study signifies differences that exist between consumer perceptions and expectations in Ethiopian Airlines. The expectations are greater than the perceived performance and resulted in dissatisfaction of passengers. Ethiopian Airlines should develop a system to fill the gap exist towards the five dimensions of service quality. Priority should be given to dimension with the highest service gap score and most important to the passengers specifically on the service provider’s ability to provide accurate and dependable services. This will help to retain more passengers as a customer for Ethiopian Airlines.

As far as the level of passengers’ satisfaction concerned, Ethiopian Airlines passengers dissatisfied with all dimensions of service quality. This indicates the Airlines poor performance in meeting passengers’ needs and requirements. To reduce the passengers’ dissatisfaction and meet passengers’ expectations Ethiopian Airlines is required to improve all dimensions of service quality. All improvement activities require the commitment of the employee and management of the Ethiopian Airlines. The other tool to fill the gap is designing training programs. Training is an important mechanism to increase the efficiency of employees in doing their job. They can gain skills on solving the problems of passengers easily, to show consistent performance, and to be sincere in resolving passengers’ complaints.

In order to get satisfied and delighted customers, the focus should be placed largely on tangibility, reliability and assurance dimensions. These are the dimensions that have significant influence on passengers’. On contrary, the other two dimensions i.e. responsiveness and empathy have insignificant influence on the satisfaction of passengers. The positive significant coefficient for passengers’ satisfaction and loyalty relationship suggests higher passenger satisfaction on Airlines service quality and the higher the loyalty of passengers towards Ethiopian Airlines. Thus, satisfied passenger is important in developing a loyal passenger.

Ethiopian Airlines should seek to develop strategies that enhance loyalty of passenger. These strategies should include meeting customers’ desired service levels, dealing effectively with dissatisfied customers, and confronting customer complaints positively. Ethiopian Airlines needs some strategic alliance to have with other travel related partners, car rentals, hotels and travel insurance. These programs benefit both the passenger and Ethiopian Airlines and increase the satisfaction of passengers. Numerous and easy to use ticketing systems, convenient flight schedules, and attractive mileage programs to reward frequent passengers can help to get loyal and committed passengers.

References

Tiernan, (2008), Airline service quality: Exploratory analysis of consumer perceptions and operational performance in the USA and EU, Managing Service Quality, Vol. 18 No. 3, pp. 212-224
Assessment of the Management of Information and Communication Technology (ICT) Infrastructure of Selected Cybercafes in Lagos State

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Abstract

Provision of public access to information through a well-managed internet café had been identified as a means to facilitating rapid socio-economic and technological development in any society. This paper examines the management of ICT infrastructure of selected cybercafés in Lagos State. A multi-stage sampling technique was used in this study. The population of this study was made up of one hundred and twenty (120) cybercafés in the selected LGAs (Shomolu, Mushin and Yaba) of Lagos State. Questionnaire was used as the instrument for gathering data for the study. One hundred and twenty (120) questionnaires were administrated to the managers/owners of cybercafés in three (3) selected Local Government Areas (LGAs) in Lagos State. Descriptive Statistics was used for the analysis of data generated for the study. The results of the study showed that ICT infrastructure were not well-managed. The study therefore recommends that a government regulatory body be mandated to set standard of the size of cybercafés, number of personal computers, structure, location, infrastructure and human resources, which are necessary to be put in place before setting-up a cybercafé business.

Keyword: Cybercafé, Infrastructure, Administration, Management, Information and Communication Technology (ICT)

Introduction

The internet has made changes in almost all aspects of our lives as it plays a role in most of what we discuss today about access to, dissemination and retrieval of information (Chachage, 2001). Statistics showed that the use of the internet has grown in the most urban areas in Africa relatively rapidly in much the same way as the adoption of the mobile phone, which followed shortly after.

The internet has made it possible for individuals everywhere with a personal computer and functional telephone line to have access to millions of pages of information. According to them, the greatest impact this new information technology has had is the narrowing of gap between the information haves and have-nots, which was exacerbated during the print-media based information resources era, in which access to the print-media based information resources was very expensive and this increased the gap (Chen, et al 1998).

Cybercafés are places where internet public access services are provided by entrepreneurs for a fee. These cybercafés can be run as part of services provided in restaurants, hostels, e.t.c or could be places set aside wholly for public access internet services. Cybercafés are run in order to enable people who either do not have personal internet connectivity or are traveling to have access to the resources and services. Cybercafés have thus become very important in Nigeria, as the cost of having internet connectivity is so high that private individuals cannot afford it.
Nigerians, like most people living in developing countries depend on cybercafés for their internet access. This is chiefly because the cost of computers is still too exorbitant for most citizens. Another factor is that the cost of buying and maintaining internet access from telecom companies in Nigeria is still too expensive for most people. African Internet (2002)

Despite the huge demand for cybercafé services in Nigeria, quality of service that these cybercafé providers deliver still leaves a lot to be desired. This is because most users have the false impression that they have no choice. African Internet (2002)

Level of privacy and internet security risks are important issues that owner and internet users take with levity or are not aware of. Internet café being public places; one can never really guarantee privacy in a cybercafé. Some internet cafés in Nigeria do not even help matters, they cram so many PCs together (In order to maximize profit) making it impossible to have any semblance of privacy. The threats of key logger, A program virus or spy ware that monitors activities on the internet noting the websites visit and all keys pressed while in any website and pipelining the data to the hard disk or to a website designed for such a purpose is another security threat in cybercafés.

Many cybercafés in Nigeria are operating with antiquated infrastructure. This is attributed to the information and communication technology (ICT) resources found in cybercafés. The functionality of these resources cannot be guaranteed at anytime because of poor maintenance culture on the resources. African Internet (2002).

Power supply, an inherent problem in Nigeria is another factor in running a cybercafé. Some cybercafés may connect system units to Uninterruptible Power Supply (UPS), without connecting the Personal Computer (PC) monitor. This is a threat to data security. Although, one may not lose data in such a cybercafé, but, will not be able to use the computer until generator is turned on. African Internet (2002)

The increasing Cyber crimes have become a major issue which government and cybercafés are facing every time, because of the continuous patronage of internet fraudsters. The crimes which include chatting with fake identities, generation of credit card numbers, e-commerce frauds, pornography e.t.c have become popular in Nigeria with “Yahoo Boys”. The numerous challenges facing cybercafé businesses are usually attributed to ineffective administration and management culture being imbibed by the cybercafé owners.

A Cybercafé is a place where internet applications are accessible to the public. Customers buy airtime in order to have access to the internet via PCs available in the internet café Local Area Network. The incessant closure of cybercafés in Nigeria is usually as a result of maladministration and mismanagement of cybercafé by owners and the lack of technical know-how of the employees. Cybercafé business is one of the commonest businesses found around in Lagos, and as such needs to well administered and managed with appropriate knowledge and skills. African Internet (2002)

The numerous challenges of the businesses can be solved by a way of periodic assessment of the cybercafés. The assessment if routinely done will afford the owners to gaining an increased level of business outputs and profit maximization. It will also enhance good quality of service to the clients, an enhanced organization and management of cybercafé, and increased level of competence in owners/managers and employees of cybercafés, Also, the cybercafé business if properly managed would transform Nigeria and Nigerians to a better information source. African Internet (2002)

At present, every capital city and major towns in Nigeria has Internet public access services. As indicated by a 2002 status report on the African Internet, as of mid-2002 the number of dial-up internet subscribers was close to 1.7 million in Africa, 20 per cent up from the previous year, mainly bolstered by growth in a few of the larger countries such as Egypt, South Africa, Morocco and

~ 182 ~
Nigeria; that shared/public access and the use of corporate networks is continuing to grow at greater rates than the number of dial-up users. The report further notes that there are now many thousands of cybercafés/business centres in the major cities of Nigeria run by small entrepreneurs who are allowed by the regulator to provide VOIP services as part of their cybercafé licence, which costs about $500 a year. African Internet (2002)

Three researchers at the Delta State University Library, Abraka Nigeria carried out a study on “A survey of cybercafés in Delta State, Nigeria.”. The study was done in Delta state—one of the thirty six (36) states of Nigeria. The state comprises 25 local government areas in rural and urban settings which run along the delta of the River Niger and shores of the Atlantic. Delta state, the capital of which is Asaba, has vast industry centred on the presence of oil/petroleum. Esharenana, (2003). It was found that; majority of the cybercafés in Delta State 11 (61.1 per cent), are owned by a single proprietor. Six cybercafés (33.3 per cent) are owned through joint partnership, while only one is government-owned; three (16.7 per cent) of the cybercafés have 15 personal computers, one (5.6 per cent) cybercafé that has just two PCs connected to the Internet, there is only one which has 25 PCs that are being used to provide Internet Services to its users; the more computers a cybercafé possesses to be able to provide services to its clients, the less congestion there will be in such an Internet café; A cybercafé, which is not well staffed, cannot provide the more demanding kind of assistance required by the clients that need to be assisted; the usage of each of the cybercafés depends on the total number of those who are aware of the services of the internet and have the need to make use of it; most of the cybercafé acquire and install stand-by electricity generating plants. These are switched on as soon as power cuts occur. African Internet (2002)

Most cybercafés render additional services which includes telephone services (Local and International), Public Relations, Publishing, Book binding. e.t.c.; As one might expect, the number of cybercafés which have ISPs located in Nigeria is greater than those whose ISPs are located overseas; Problems militating against cybercafé Internet services business includes High Cost of Internet Connectivity, Frequent/Occasional loss of Contact Signals with ISP, High Cost of maintaining equipment, frequent electricity black-outs, Low patronage from customers. Lack of search skills by some clients, e.t.c. Virus attacks and technical problems.

The rise of the Internet and online games are the drivers of the current rapid growth of Internet cafés in Taiwan Dietz TL. (1998). Internet cafés mostly target adolescents and provide them with networked computer games, chat room services, and bulletin boards. However, most users were attracted by the rapid Internet connections and variety of computer games. 1 Computer game content and space are widely believed to be highly gendered Bryce (2003) Nevertheless, the gender dynamics of Internet use and online game contexts have been changing; for example, Internet penetration rate for females is increasing, as is the popularity of MMORPGs (massively multiplayer online role-playing games) and the number of female gamers. The main purpose of this study is to examine the management of ICT infrastructure of selected cybercafés in Lagos State.

Methodology

A multi-stage sampling technique was used for purpose of this study. The first stage was selection of two divisions of Lagos State (Ikeja and Lagos). The second stage was the selection of three Local Government Areas (LGAs) which are Shomolu, Mushin and Yaba. In the third stage, forty (40) cybercafés were randomly selected from each local government areas which resulted to the administration of a total number of one hundred and twenty (120) questionnaires in the selected local government areas in Lagos State. One hundred and five (105) completed questionnaires were retrieved; hence sample size of the study is one hundred and five (105) respondents.
The population of this study is made up of one hundred and twenty (120) cybercafés in the selected LGAs (Shomolu, Mushin and Yaba) of Lagos State.

A structured questionnaire designed by the investigator and validated by the project supervisor and, was used for collecting data for this study. A copy of the questionnaire was administered to each of the cybercafés and filled by the proprietors/managers cybercafés. The instrument probes majorly managerial skills for cybercafé, employees’ skills level, cybercafé security and challenges, and the Information and Communication Technology (ICT) infrastructure. Responses were measured accordingly to the nature and options for the questions.

All the returned questionnaires were found useful. Statistical Package for Social Science (SPSS) was used for data analysis. Descriptive statistics i.e (frequencies, percentages and chart) was employed in the analysis.

Results and Discussion

The cybercafé as a place where the public access for internet use has to properly administered and managed for efficient and effective service delivery. Three (3) local government areas of Lagos state understudied were; Yaba, Mushin and Surulere. A total number of one hundred and five (105) questionnaires were collected for data processing and analysis, out of the one hundred and twenty (120) questionnaires administered in the selected areas.

It is a known fact that different managers and workers in any cybercafés have methods, techniques and approaches in achieving their business goals and objectives. Some of them have been greatly affected by the growing levels of technologies in the business area.

A number of factors were taken into consideration in the design of the questionnaires; to capture the objectives of the study.

Information and Communication Technology (ICT) Infrastructure of Cybercafes

The ICT Infrastructure that are necessary to be available for use in any cybercafés include personal computers, switches, hubs, billing and management software, and others software and hardware necessary to bring efficient and effective service delivery in a typical cybercafé.

Availability of Personal Computers (PCs) in Cybercafés

The number of PCs that are made available for use affect the return on the cybercafé business. The PCs could either be used for Internet and Non-Internet services in any cybercafé. It is normal to have at least two functional PCs in a cybercafé. The result of the study revealed that 41.9% of the cybercafés made less than ten (10) PCs for use, 57.1%(between ten (10) and twenty (20)) and 1% (between twenty-one (21) PCs and thirty (30) PCs). The table below shows the result.
Table 1: Availability of Personal Computers (PC) in Cybercafés

<table>
<thead>
<tr>
<th>Number of PC</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10</td>
<td>44</td>
<td>41.9</td>
</tr>
<tr>
<td>10-20</td>
<td>60</td>
<td>57.1</td>
</tr>
<tr>
<td>21-30</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>105</td>
<td>100</td>
</tr>
</tbody>
</table>

The number of PCs in any cybercafé for use could be as result of the size of cybercafés i.e micro, small, medium and large. The result above posed a serious implication on the return on the cybercafé business financially.

Number of Personal Computers with Internet Connection in Cybercafes

In most cybercafés, the number of PCs with Internet connection could be as result of size of the cybercafés, logical or financial reasons. At times, the owners/managers separate the PCs that are meant for Internet and Non-Internet services. The number of PCs that are Internet –Ready affects the users that are willing to surf the Internet at a point in time. It was revealed that 58.1% of the cybercafés understudied had less than ten(10) PCs with Internet Connection while 41.9% of the cybercafés had between ten(10) and twenty(20) PCs with Internet Connection. The table below shows the result.

Table 2: Number of Personal Computers with Internet Connection in Cybercafés

<table>
<thead>
<tr>
<th>Number of PC</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10</td>
<td>61</td>
<td>58.1</td>
</tr>
<tr>
<td>20-Oct</td>
<td>44</td>
<td>41.9</td>
</tr>
<tr>
<td>Total</td>
<td>105</td>
<td>100</td>
</tr>
</tbody>
</table>

Billing and Management Software in Cybercafes

For an efficient and cost-effective service delivery to clients and security purposes, owners/managers usually installed and use billing and management software. In this study, it was found that all the owners were using the software to enhance productivity. This was against the days when cybercafés were managed manually.

There are many billing and management being used today. The software could be bought over or written locally by software developers. The sophistication of the software has been helpful in curbing cybercrimes both in Nigeria and abroad. It has also enhanced the operation of computer-related activity in cybercafés. In this study, the ones that were being used in the cybercafés are presented in the chart below.
Chart 1: Chart Showing the Number of Billing and Management Software in Cybercafés

There are many internet connections being used in cybercafés today. It could be wired or wireless connection. The choice of connection could be personal or Internet Service Provider (ISP) recommendation. They include Very Small Aperture Terminal (VSAT), Radio, Dial-up and wireless connections. It was found out that 46.7% of cybercafés were using radio connection, wireless (22.9%), dial-up (16.2%) and VSAT (14.3%). The table below shows the result.

Table 3: Internet Connection in Cybercafés

<table>
<thead>
<tr>
<th>Internet Connection</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Small Aperture Terminal</td>
<td>15</td>
<td>14.3</td>
</tr>
<tr>
<td>Radio</td>
<td>49</td>
<td>46.7</td>
</tr>
<tr>
<td>Wireless</td>
<td>24</td>
<td>22.9</td>
</tr>
<tr>
<td>Dial-up</td>
<td>17</td>
<td>16.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>105</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Maintenance of ICT Infrastructure in Cybercafés

The need for maintenance of ICT Infrastructure cannot be over-emphasized. The software and hardware have to be constantly maintained for better productivity and performance. In most business organizations, the maintenance checks that are being performed on equipments/systems are preventive, corrective and routine maintenance. The inefficiency in business operation of some businesses or inadequacy of equipment/tools could be one of the reasons while most of the businesses engage in corrective maintenance rather than preventive maintenance.
In this study, it was revealed that majority of owners/managers performed corrective maintenance on the ICT infrastructure i.e about 85% of the cybercafés understudied while 15.2% of the cybercafés performed routine maintenance.

The results indicate that less attention was paid to routine maintenance which generally reduces maintenance cost. The table below shows the result.

### Table 4: Maintenance of ICT Infrastructure in Cybercafés

<table>
<thead>
<tr>
<th>Type of Maintenance</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrective maintenance</td>
<td>89</td>
<td>84.8</td>
</tr>
<tr>
<td>Routine maintenance</td>
<td>16</td>
<td>15.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>105</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

#### Functionality of Hardware and Software in Cybercafés

It is always a good thing to determine the performance of the various hardware and software in cybercafés. This could be done at a specific period of time. It was revealed that the performance of hardware and software of the 64.8% of cybercafés understudied was fair, performance of 31.4% of cybercafés was good and performance of 3.8% of cybercafés was poor. The table below shows the result.

### Table 5: Functionality of Hardware and Software in Cybercafés

<table>
<thead>
<tr>
<th>Rating of Performance</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td>Fair</td>
<td>68</td>
<td>64.8</td>
</tr>
<tr>
<td>Good</td>
<td>33</td>
<td>31.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>105</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

#### Conclusion

Majority of cybercafés practice corrective maintenance on their infrastructure, which is not a good practice to sustain the growth of any business. The functionality of hardware and software of cybercafés understudied was fair. Majority of the cybercafés understudied had a few PCs connected to internet. It was concluded that effective, efficient and sophisticated methods are still needed to manage and maintain the infrastructure in the cybercafés. This will further increase the efficiency and lifespan of infrastructure.

In view of the findings of the study, the following recommendations are made for policy formulation.
- Cybercafés should be registered as corporate body members of Computer Professional of Nigeria (CPN). The necessary knowledge and skills required to manage cybercafé business
could be gathered by attending regularly the seminars, workshops and conferences being organized by the CPN. The information to improve and upgrade the business could also be sourced from other organizations/professional bodies.

- A regulatory body with specific mandate on staff, users, infrastructure, ethical issues should be set-up by the government. The body should be mandated to regulate the activities in the business. The body should also set minimum standard in the size, number of Personal Computers (PC), structure, location, infrastructure, human resources necessary to be put in place before a cybercafé could be set-up. This will go a long way in sanitizing the business and improve its organization, so as to attract the local and foreign users.

- The stakeholders of such regulatory body should periodically schedule meeting with the management of cybercafés, so as create a platform for exchange of views, ideas and information. Also, it will afford them opportunity of integrating partnership and collaborations to discuss challenges and possible solutions.

- An experienced technical manager should be employed to manage the ICT resources of cybercafés.

References


