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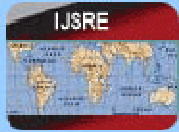
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## Realism with the Triangulation Techniques: The Effective Methods for Social Science Research

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### Abstract

In the current research context, realism has been adopted as the most suitable paradigm by which to discover the needs of the current attempt to understand the management of knowledge workers in the Multimedia Super Corridor (MSC) status companies, Malaysia. This is because as a realist, one can discover a world with no bounds. In this regard, compared to positivism, which is known as value-free, and interpretivism, known as value-laden, realism is rather value-conscious. Positivism implies that one should focus on what one can observe and measure. On the other hand, interpretivism argues that meanings and roles are not fixed and given (deterministic), but that negotiation in interaction is viewed to help the researcher to interpret results. Even though this interpretivism may be able to fill the gap created by positivism – that is, a comprehensive understanding of the whole - it still cannot provide strong findings. This is due to its lack of transparency, being too subjective, difficult to replicate and carrying problems with generalisation. In another case, as knowledge workers serve as the unit of analysis of this study, realism allows the researcher to expand the assumptions made by the positivist as well as the interpretivist approach. Realism provides better mechanisms for discovering the behaviour of human beings more intuitively. It allows the researcher to explore, describe and explain issues related to the current study more deeply. Overall, this paper highlights a discussion of realism as a successful philosophical background to the social science research.

**Keywords:** *Realism, Social Science Research, Qualitative Research and Triangulation*

Reference to this paper should be made as follows:

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## INTRODUCTION

Research design is the “master technique” (Kornhauser & Lazarsfeld, 1975, cited in Ghauri & Grønhaug, 2005: p. 26), which plays a very important role in finding answers to research questions. It provides the method by which a study can be completed and gives guidelines and/or instructions on how to collect and analyse the data (Churchill, 2007). Thus, one must be capable of identifying the best design by which to undertake social science research. An error of choice will have a huge and negative impact on the output. This is supported by Ghauri and Grønhaug, (2005: p. 27), who stated that: “...other common mistakes... [in research design]... are making wrong and/or irrelevant design choices, such as examining a badly understood problem with a very structured design...[or]...examining structured, well-understood problems with ‘unstructured’ methods, making it difficult to answer the research problem adequately...”. They further suggested that the researcher should look at three main aspects, as shown below in Table 1:

## 1: Types of Research Design

<b>Problem structure</b>	<b>Research Design</b>
Unstructured	Exploratory
Structured	Descriptive
Structured	Causal

Source: Ghauri and Grønhaug (2005: p. 27)

## RESEARCH DESIGN

There are three main types of research design, as outlined by Churchill (1991), Ghauri and Grønhaug (2005) and Saunders et al. (2000). These are exploratory, descriptive and causal. Even though all these research designs are explained as separate entities, the researcher can still combine them into one framework (Gill & Johnson, 2002). For instance, in the current study, all the above designs - exploratory, descriptive and explanatory - have been applied to collect data within the MSC status companies.

### *Exploratory Design*

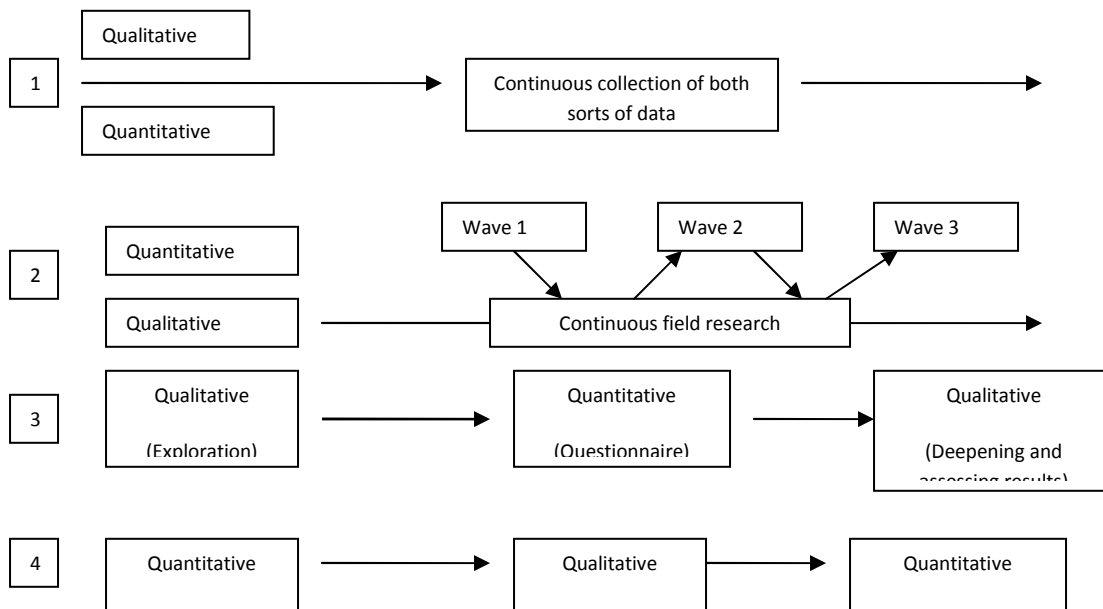
Firstly, exploratory research is usually conducted when the research problems are poorly understood (Ghauri and Grønhaug, 2005: p. 28). It commonly utilises the qualitative data collection method (Ghauri & Grønhaug, 2005; Zikmund, 2009). In this case, Ghauri and Grønhaug (2005) also emphasised that the researcher must have the ability to observe, get information and construct an explanation (i.e. theorise) from the findings. Within the current research context (i.e. *The role of human resource management in knowledge management: a study of managing knowledge workers in the Multimedia Super Corridor (MSC) status companies, Malaysia*), this approach is considered to be useful due to the research objective, which is to understand the human resource management issues pertaining to the management of knowledge workers in Malaysia, which until now have been little addressed in the local context (see, for example, Yahya & Goh, 2002). Thus, exploring this issue of managing knowledge workers within the locale of Malaysia gives the researcher a greater understanding of their perception of the importance and implementation of knowledge management in knowledge based companies such as those in the MSC. Apart from that, the exploratory research not only contributes in clarifying specific research themes, but also helps to verify certain methodologically related questions (De Vaus, 2002). For instance, after conducting the questionnaire survey, it was realised that there was a need to cross check the findings by examining more specific issues and questions during in-depth semi-structured interviews.

In other cases, authors may consider that exploratory research should utilise qualitative data collection (Ghauri & Grønhaug, 2005; Zikmund, 2009). However, in this case, the triangulation of quantitative (i.e. questionnaires survey) and qualitative (i.e. in-depth semi-structured interview) approaches has been used in gathering data. This is purposefully done to ensure that the findings are sufficiently rigorous for further empirical analysis. This is in agreement with other authors who encourage use of the best methods of data collection, such as Miles and Huberman (1994, cited in Flick, 2002: p. 264) and Ghauri and Grønhaug (2005). For instance, according to Miles and Huberman (1994), as shown in Figure 1, there are many ways of carrying out triangulation of methods. Four methods have been recognised so far: firstly, qualitative and quantitative methods can be used together from the beginning of data collection until completion; secondly, the researcher can use qualitative and quantitative methods in alternate waves; thirdly the researcher can begin with a qualitative method, follow-up with quantitative and then double check with qualitative again, and finally, the researcher can take the same approach as in the third method but start with quantitative methods, using qualitative methods to double-check and finally conducting an experiment.

In this study, due to the consideration of cost and the limited time allocated for the fieldwork (i.e. three months), it was decided to adopt the third approach, which was initiated with a literature review on the exploration of the related issues and peer discussions. The questionnaire survey and an in-depth semi-structured interview follow later. A further discussion of these triangulation methods is provided in the next section.

Furthermore, the findings from this exploratory research could be the best foundation for the researcher's future research. This is because exploratory research has been also described as an appropriate precursor to the development of more specific descriptive and good causal explanations (Churchill, 2007; Morgan, 1997). In agreement with this, Sekaran (2006: p. 95) states that: "...exploratory studies are done to better comprehend the nature of the problem since very few studies might have been conducted regarding the phenomenon needed to be understood. Extensive interviews with many people might have to be undertaken to get a handle on the situation and the phenomena. Once a better understanding is obtained, more rigorous research can then proceed...".

Figure 1: Research Designs for the Integration of Qualitative and Quantitative Methods



Source: Adapted from Miles and Huberman (1994: p. 41), (cited in Flick, 2002: p. 265)

### ***Descriptive Research***

The next design is descriptive research. As this study is also trying to answer the questions of “what” and “how”, descriptive research is required in order to present data in a more meaningful way (Sarantakos, 2005; Sekaran, 2006; Zikmund, 2009). According to Sekaran (2006: p. 97), descriptive research helps “... to understand the characteristics of a group in a situation of interest, aid in thinking systematically about aspects in a given situation, offer ideas for further probing and research, and/or help make certain simple decisions (such as how many and what kinds of individuals should be transferred from one department to another)”. Usually, this approach is suitable when the research objective is to describe the social phenomenon of interest, such as describing the demographic characteristics of the population under study (i.e. knowledge workers in the MSC status companies); determining the proportion of the population that behaves in certain ways; and to make certain predictions on the basis of the findings (Churchill 2007; Schutt, 2009). In other words, this method is applied, firstly, to provide general views on the characteristics of knowledge workers from the local context. Secondly, it is used in describing the perceptions of knowledge workers towards knowledge management practices in MSC status companies, Malaysia (i.e. importance and implementation). Finally, it describes how they perceive matters related to the roles of human resource management for the implementation of knowledge management.

### ***Explanatory Research***

The third research design is explanatory research. It is usually conducted when the researcher has a clear view of the research problem. In this regard, the research problem will become more narrowly defined after conducting the exploratory and descriptive research (Churchill, 2007; Zikmund, 2009; Schutt, 2009). Therefore, in order to identify further relationships between the variables or their impact on certain issues, causal research (i.e. explanatory research) is required (Sekaran, 2006; Zikmund, 2009). Some authors referred to it as “explanatory research” (Churchill, 2007), “cause-and-effect research” (Zikmund, 2009) or “causal and evaluation research” (Schutt, 2009). In this thesis, the term “explanatory research” will be used in further discussions. In this view, explanatory research is based more on assessing the problem situation by involving causal relationships between variables. At the same time the researcher is free to control certain variables with the purpose of seeing the effects on other dependent variables. Nick Bontis is a well-known researcher who has applied this type of design in conducting knowledge management research (Cabrita and Bontis, 2008). For example, in his research with his colleague, sampling 76 senior executives from 25 financial services companies,

Bontis and Fitz-enz (2002) measured the antecedents and consequence of effective human capital (i.e. knowledge workers) management. The findings revealed the existence of causal relationships between human capital management and business performance. Another example of this type of research is experimental research, which normally entails testing hypotheses (Sekaran, 2006: p. 98). This is done by testing the relationships between variables that have been clearly defined. Furthermore, explanatory research is aimed at assessing the existing procedures, or may be focused on whether particular policies and programmes help to curb or minimise a problem. In this view, Ordóñez de Pablos (2004) provides a good example from her work on 123 Spanish manufacturing companies. Using a structural equation modelling technique, she tested the hypotheses underpinning the link between the human resource management systems (HRMS), strategic organisational resources and the creation of sustained competitive advantage. It was found that “an internal HRMS contributes to the creation of knowledge stocks as individual level that is human capital [i.e. knowledge workers]” (p. 486). However, even though the earlier works by Bontis and Fitz-enz (2002) and Ordóñez de Pablos (2004) could give some indications of the relationships between human resource management, knowledge management and managing knowledge workers, more work, providing further empirical data with qualitative findings, is needed in order to support the above situation and offer greater depth and explanation of such relationships. Therefore, the current study has also taken this challenge in order to provide more robust findings. Here, the explanatory design helps the researcher to reveal key views of the relationship between knowledge workers, knowledge management, human resource management and the government development agency towards the end of data analysis. In the light of the above understanding, exploratory and descriptive research designs have also been adopted in the current study. This is because of its capability to provide the researcher with a deep understanding of human resource management issues pertaining to the management of knowledge workers in the Malaysian context. While, in this study, explanations or possible relationships are explored, clear cause-and-effect relations have not been sought as such. The explanatory findings thus permit the researcher to outline several more interesting issues that could be useful for future research.

## **RESEARCH PHILOSOPHICAL BACKGROUND: A REALIST APPROACH**

In implementing the research designs discussed above, the ontological assumptions is first identified (i.e. the nature of understanding of the subject matter). This then leads to the development of epistemological assumptions regarding how exactly the researcher views the world. In reflecting on these assumptions, several research paradigms are offered in social science research. A paradigm is defined as “a set of beliefs (of metaphysics) that deals with ultimate or first principles. It represents a worldview that defines ...for its holder, the nature of the ‘world’, the individual’s place in it, and the range of possible relationships to that world and its part...” Different authors have discussed paradigms in different ways. Authors like Guba and Lincoln (1994) summarised these paradigms into three groups: “positivism”, “interpretivism” and “realism”. May (2001) put the issue in broader terms by classing paradigms as “objectivity”, “positivism”, “empiricism”, “realism”, “subjectivity”, “idealism”, “building-bridge” and “postmodernism”. In another case, Allan (2005) divided them into “positivism”, “interpretivism” and “eclecticism”. In recent years, Remenyi et al. (2000) highlighted the use of the “positivist” and the “non-positivist” (i.e. phenomenological) approaches. In the current research context, realism has been adopted as the most suitable paradigm by which to discover the needs of the current attempt to understand the management of knowledge workers in the MSC Status Companies, Malaysia. This is because as a realist, one can discover a world with no bounds (Ackroyd & Fleetwood, 2000). These authors further claim that realism involves three main criteria: “The first is that there is a prediction to connect things in realist research and writing, which is not found with such frequency or extent in other types of approach to the field...The second claim is that realist analysis engenders debate about the nature of the world that research has uncovered or partly uncovered that may contribute to the growth of knowledge...The third claim is that realism has emancipatory [i.e. unrestrained] potential” (pp. 22-23).

In other words, this means that the researcher is free to see the world as it is, without the restrictions outlined by positivism and interpretivism. In this regard, compared to positivism, which is known as value-free, and interpretivism, known as value-laden, realism is rather value-conscious (Bhaskar, 1989; Lincoln & Guba, 1985). Positivism implies that one should focus on what one can observe and measure (Friedman, 1999). In this regard, the world and the universe are considered to be deterministic—they operate by laws of cause and effect such as “all cats are cats” (tautologies) and, “2+2= 4” (mathematics) (Trochim, 2002). These statements, according to positivism, can only become true by hypothesis-testing that locates sense and meaning with experience through quantitative research. On the other hand, interpretivism argues that meanings and roles are not fixed and given (deterministic), but that negotiation in interaction is viewed to help the researcher to interpret results (Guba and Lincoln, 1994). In this regard, the qualitative approach used by interpretivists is a way to gain insights through discovering meanings by improving the comprehension of the issue as a whole (Strauss & Corbin, 2009). Furthermore, even though this interpretivism may be able to fill the gap created by positivism – that is, a

comprehensive understanding of the whole - it still cannot provide strong findings. This is due to its lack of transparency, being too subjective, difficult to replicate and carrying problems with generalisation (Guba & Lincoln, 1994).

In another case, as knowledge workers serve as the unit of analysis of this study, realism allows the researcher to expand the assumptions made by the positivist as well as the interpretivist approach. Realism provides better mechanisms for discovering the behaviour of human beings more intuitively (Sayer, 2000). Furthermore, the eligibility of realism to utilise both quantitative and qualitative approaches provides the advantage of studying human behaviour in different ways (Ackroyd & Fleetwood, 2000; Sayer, 2000). It allows the researcher to explore, describe and explain issues related to the current study more deeply, as mentioned in the earlier section on research design. Furthermore, this is because, from the perspective of the scientific method, physical sciences and social sciences are two different things. In this view, Godard (1993: p. 288) states: "At the heart of the social action critique is the argument that there is a fundamental difference between the subject matter of the physical sciences and that of social sciences: where the physical sciences study inanimate objects incapable of making conscious choices, the social sciences study human subjects with a will and volition of their own. Thus, where the behaviour of the former can be studied in accordance with their objective physical properties and is determined by external, causal forces, the behaviour of the latter must be studied in accordance with essentially subjective motives and belief systems and is determined by conscious and unconscious choice processes. It follows that though the behaviour of physical objects is subject to universal laws and can (ideally) be predicted with a high degree of certainty based upon these laws; the behaviour of human beings is not subject to such laws and cannot be predicted with a high degree of certainty. If behaviour does appear to be readily predicted, it is only because individuals choose to behave in certain ways under certain conditions. Thus, the task of the social sciences is to analyse not the 'objective' but rather 'subjective', seeking to explain and understand behaviour with reference to underlying motives and meanings systems [i.e. theoretical realism] rather than to predict and control it."

In relation to this study, the researcher has set out to explore, describe and explain knowledge workers' current perceptions of the concept of the implementation of knowledge management and their understanding of how human resource management may support its effectiveness. There is no determination of results in studying knowledge workers' behaviours as predicted by the positivist. However, the current study tries to report the findings as they are, i.e. the reality of the phenomenon under investigation, and provides rigorous discussions of the results collected via triangulation methods. This then allows the researcher to generalise the findings toward a broader aspect, especially within the MSC status companies. Therefore, there will be no proper regulations and/or laws in investigating these issues. This is then referring to the "subjectively constituted social reality" that provides "generative mechanisms" for conducting social science research not only at the surface but also at the level of concrete reality beyond (Godard, 1993). In the light of this understanding, the nature of realism is that the physical and social worlds exist independently despite the knowledge that we have (Ackroyd & Fleetwood, 2000; Sayer, 2000). Thus, in agreement with the performance potential suggested by Reed (2000), causal power or ways of acting would become the concrete source in further explaining the relationship between the physical and the social world. For instance, in the case of high turnover in the company, this might no longer be simply due to job satisfaction; other factors such as competitive reward packages, the company working culture, the job challenge and leadership commitment could also be considered as reasons.

In other words, from the realist point of view, the above social phenomena, such as workers' actions, leadership commitment and company policy, are concept-dependent. The main task here is not only to explain such matters and their effects, but also to understand and interpret exactly what they mean. For example, if young knowledge workers tend to leave the company after a two-year period, then there will be a need to explain not only "about" their leaving, but also "why" this is occurring. Therefore, there are dissimilarities in the perception of reality in the realist paradigm compared to positivism and interpretivism. As mentioned earlier, objects and social relations in the social sciences have been argued to have causal power; thus, there is no fixed expectation that they may or may not produce regularities (Bhaskar, 2009). In view of this, there is a need for more methods by which to establish and evaluate the qualitative nature of social objects and relations on which causal mechanism depend in order to discover and assess regularities in the social sciences (Ackroyd & Fleetwood, 2000; Guba & Lincoln, 1994; Sayer, 2000), and less weight is placed on quantitative methods.

## **SUMMARY**

On final analysis, it can be concluded that realism allows the combination of quantitative and qualitative methods. It has a major impact on the way social science research is carried out, especially in terms of research design, questions and research ethics. Therefore, for the purpose of this research, both methodologies have been utilised. In particular, qualitative methods (i.e. interviewing) and quantitative methods (i.e. questionnaire surveys) are the common techniques used by many researchers in developing and analysing their data. Both contribute to the success of contemporary social research (Denzin & Lincoln, 2000). Furthermore, according to Merriam (1998), qualitative research acts as an umbrella

concept covering several forms of inquiry that helps to explain the meaning of social phenomena with as little disruption of the natural settings as possible, and in which the focus of the research is on interpretation and meaning. In other words, it is appropriate to research things as they are in their natural settings, and by attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them that are real. Denzin and Lincoln (2000: p. 8) have also pointed out that qualitative research seeks answers to questions that underline “*how*” social experience is created and given a meaning. In contrast, quantitative studies, which are normally conducted by the positivist, emphasise the measurement and analysis of causal relationships between variables and not processes.

In this research i.e. “*the role of human resource management in knowledge management: a study of managing knowledge workers in the Multimedia Super Corridor (MSC) status companies, Malaysia*”, a questionnaire survey and an in-depth semi-structured interview of the primary sources were used for data collection. Secondary sources such as printed materials, i.e. annual reports, magazines and news releases, are also gathered for the purpose of further clarification. These triangulation methods have also been seen to help in cross checking the findings from each of the methods used, thus contributing to a greater reliability and validity of results (Denzin & Lincoln, 2000; Silverman, 2000). In addition, these triangulation methods may also reduce the weaknesses of the research design and strategies, as the latter will be compensated by the counter-balancing strengths of the former (Bhaskar, 2009). Thus, this approach may provide more meticulous findings (Gill & Johnson, 2002). In this research, qualitative methods were used to cross check the earlier findings gathered by the questionnaire survey. However, the main drawback of triangulation is that it may not be suitable for further replication, as it is very costly and time-consuming (Hussey & Hussey, 2003: p. 75). Furthermore, according to Gill and Johnson (2002), there are three different applications for triangulation: firstly, the use of different research methods in the same study to collect data and to check the validity of the findings, secondly, the collection of different data on the same phenomena, sometimes using different researchers so as to validate findings, and thirdly, collecting data on the same phenomena at different times and places within the same study. This research on “*the role of human resource management in knowledge management: a study of managing knowledge workers in the Multimedia Super Corridor (MSC) status companies, Malaysia*”, employs the third category as shown in Figure 1 (see page 3). It starts with the exploration of research issues via a qualitative technique (i.e. a literature review on knowledge, knowledge work, knowledge workers, knowledge management, human resource management and an analysis on the Malaysian economic framework). After that, the fieldwork began with the questionnaire survey as the first stage, followed by the in-depth semi-structured interviews.

Zickmund (2009) pointed out that there are many ethical issues to be considered when carrying out survey-based research, such as the respondents’ right to privacy; the use of deception; the respondents’ right to be informed about the purpose of the research; the need for confidentiality; the need for honesty in collecting data; and the need for objectivity in reporting data. In agreement with this, it has been emphasised that through shared guidelines, principles, and written and unwritten laws, research ethics help the researcher to ensure that the end purpose of a scientific endeavour is compatible with its values and goals (Kimmel, 1988: p. 42). Therefore, in conducting this type of study, moral conduct is of great importance. For instance, permission to access Multimedia Super Corridor status companies must be obtained and appointments need to be made with all knowledge workers prior to the interview session. In the dissemination of the results of this study, it is important that the names and positions of the respondents are not identified. For this reason and in order to maintain anonymity, subjects were coded. Interviewees in the study were identified by numbers, that is, R1 for respondent number 1, R2 for respondent number 2 and so on. The researcher also respected any obligations made to the participants, such as to provide them with the results of the current study when completed (i.e. abstract of the thesis).

In fact, from the perspective of realism, the strength of this approach is that it provides the researcher with a holistic understanding in investigating the current issues. This has been emphasised by Tsoukas (2000: p. 534), who stated that: “We are realist simply because reality is where it has always been, outside our heads. Insofar as we create structures through patterns of sustained interaction, from the micro-level of the small group right to the macro-level of global economic systems, we are confronted by real structures, which we only partially and often indirectly and unintentionally have helped create. Such structures cause us to form beliefs about them. In turn, our descriptions of these structures (more precisely, how we describe them) are matters which depend on the language-based institutionalised meanings of a community of actors have historically adopted.” To summarise, this paper began with the research design underpinning the current study, namely the exploratory and descriptive approaches. These designs were based on the paradigm of realism, which allows the researcher to see the world as it is, rather than becoming too subjective or too deterministic. This was then taken together with the method employed for the social science research, namely the triangulation method. It was hoped that this new revolution of research methodology used in any social science research could be regarded as valuable methods, contributing towards rigorous results. In addition, an in-depth semi-structured interview is considered as a “deep” inductive approach that appears to be similar to ethnographic and phenomenological studies, and provides detailed observations of behaviour within a number of individual knowledge workers. In this view, the qualitative research offers a greater depth of information to complement and extend the earlier quantitative survey results. Thus, these

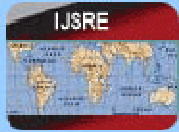
methods definitely contribute towards the acquisition of detailed information, as normally required by all researchers. Furthermore, Hakim (2000: p. 32) has pointed out that one common linkage between qualitative and quantitative research is that the results of the two linked studies are sometimes presented in a single report.

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## African Scholars Publishing in American Online Journals: Emperical Analysis by an Editor

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### Abstract

There are some American online journals dedicated to publishing research findings of African scholars. One such online journal is The African Symposium (TAS). Although these journals might not suffer the same technological problems of African online journals, they nonetheless face many problems associated with human and technological inadequacies that make publication decisions difficult for an editor of such American online journals. The thrust of this article is to highlight some of these human and technological problems using empirical evidence from the analysis of received journal articles and feedback from a focused group discussion in a Nigerian university. Much of what is discussed in this paper is generated from insights acquired over the years as the managing editor of The African Symposium, the online journal of African Educational Research Network (AERN). Suggestions are made as to how to help minimize some of the identified problems and increase the publication opportunities of African scholars who either “publish or perish” in their various institutions on one hand, and how international research institutions and donor agencies can assist African scholars narrow the digital divide that exists between them and their American counterparts, on the other.

Keywords: African scholars, Publishing, American online journals, Emperical analysis

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## INTRODUCTION

The African Educational Research Network (AERN) was founded in 1992 by a small group of United States and African universities (visit [www.africanresearch.org](http://www.africanresearch.org) for more information). It is a non-profit network dedicated mainly to the dissemination of information on Africa. The main projects of AERN include *The African Symposium*, our on-line African educational research journal and a variety of other activities to promote and support Africa-based scholars (AERN 2008). *The African Symposium* is specifically devoted to publishing original research findings on educational and human development issues in and on Africa. Thus the focus of the journal is large and flexible enough to accommodate scholars interested in Africa from any part of the globe.

At the first annual summit of AERN at Albany State University in April 2005, I was unanimously appointed the managing editor of *TAS* having earlier served as a reviewer for the journal for more than three years. My tenure as editor marked the beginning of the fifth year of successful online publication of the journal. My first assignment as editor was to raise the profile of the journal by applying for an international standard serial number (ISSN). Effective February 22, 2006, under Title 17 of the United States Code, the United States copyright office of the library of congress registered *The*

*African Symposium: An Online Journal of the African Educational Research Network* with assigned ISSN TX 6-342-323. A copyright certificate was also issued and since then, the registration information has been put on all of our publications.

Since 1999 when *The African Symposium* made its debut, a timely publishing outlet has been provided to many African and American scholars and students who had hitherto relied on traditional paper journals for their articles. This effort has ensured access of African graduate scholars and students in American institutions to the works of scholars and graduate students in African educational and human development. Brochures were printed and widely circulated through AERN members from Africa and the United States. The journal was also advertised in many international and educational organizations like *Yearbook of International Organizations* (<http://www.uia.org>) and Project of the Center for Research Libraries ([joyh@gragonbbs.com](mailto:joyh@gragonbbs.com)) among others. These efforts were rewarded with an avalanche of articles from African and American authors sent periodically to the editor electronically. While technological inadequacies are not a major threat to scholarly online publication in the United States, the same cannot be said of Africa. Most African nations face both technological and human problems in the preparation and transmission of online journal articles electronically to the editor in America.

## LITERATURE REVIEW

African scholars work in technologically challenged environments (Oshikoya & Hussain, 2004). That Africa is the least technologically developed continent of the world is no longer in contention (Oshikoya & Hussain, 2004). While developed countries of the West seek to conquer space to further enhance scientific and technological development of their societies and environments, much of the African continent is still struggling to feed its teeming population and curb the menace of health and educational problems occasioned by mass illiteracy and the scourge of HIV/AIDS (Ngulube, 2004). While most African governments cannot even harness their natural endowments and low labor costs to improve the lives of their peoples, developed countries have developed information and communication technology (ICT) infrastructure that makes them competitive in an increasingly globalized economy (Oshikoya & Hussain, 2004). According to Oshikoya & Hussain (2004), “the competitive and comparative advantages of countries are being determined by access to information technology and knowledge” (p.1). It may seem that Africa has more pressing problems at hand, such as education, primary health, and AIDS awareness, among others, than the development of ICT infrastructure. But the fact remains that the development of ICT is the only hope that will accelerate the development of other sectors of the African economy including education. The current ICT development deficit in Africa adversely affects the efficiency of African authors in the preparation and dissemination of their research findings through electronic transfer of the results to online journals abroad.

Ngulube (2004, p.1), noted that ‘the computer (and its associated technologies) is the major driving force behind the technological changes affecting access to information’. In many African countries where articles are sent to TAS like Nigeria, Kenya, Botswana, Tanzania, Zimbabwe, and Uganda, there are significant challenges associated with ownership of personal and/or government computers that could have enhanced the authors’ access to information. In a discussion following an address to prospective Nigerian authors in February 2007 at the Obafemi Awolowo University, Ile-Ife, Nigeria, (Adewuyi, 2007), I was informed of many problems the University lecturers face that inhibit their research and teaching jobs. Many of the problems had to do with lack of ICT infrastructure, including computers.

The Internet holds the greatest potential to give African scholars access to required information to enhance their research and teaching efforts. However, Internet connectivity on the African continent lags far behind that of the rest of the world. Even where full Internet exists, it is generally restricted to the urban centers and its cost is far beyond the means of public sector users. At the same time, irregular electric power supply in many countries (Nigeria is a notorious example), necessitates the private cyber cafes to embark on the use of generators powered by expensive gasoline or diesel fuel, the availability of which is not regular. Indeed, UNESCO (2003, p.2) asserts that ‘70% of Africa’s population does not live in reach of Internet access points. Both inadequate telecommunication systems, the socio-economic situation, as well as lack of human resources in some countries are the main reason for Africa’s low connectivity.’

Lack of adequate training in the use of ICT is problematic in Africa. For third world scholars to enter and compete in the global computer and knowledge age, they would need adequate training in Information and Communication Technology. In Liberia for instance, Wongbe (2004, p.1-2) laments that ‘more than 80% of school children graduate from school without ever having seen or touched a computer in the classroom.’ Furthermore, ‘the teachers are not trained in the use of computers and there is no form of Information Technology education training in the schools’ curriculum.’ Even in 2011, this observation holds true in many African countries. The point here is that in the educational context, ICTs are simply tools for facilitating research, teaching and learning. The effective and appropriate use of ICTs is actually more important than their availability.

Aside from technological problems faced by African authors, research on communicative competence and academic discourse has for long exposed the linguistic problems that African scholars face in writing scholarly articles in

the English language. Most African scholars use English as a second language, having naturally acquired a mother tongue before learning English formally in school. In that sense, most African scholars are at least bilingual, while others are multi-lingual. Writing academic papers in a language other than the mother tongue may pose problems. For instance, Roscoe (1977) lamented the multilingual situation in Africa:

It is well known that the wealth of language Africa has inherited from the past hangs on the continent like a millstone, obstructing basic communication, exasperating central governments, confusing educational systems, and making the overall task of development hopelessly tough and expensive. (p. 35).

Alo (2003) actually links communicative behavior with academic success, insisting that writers/scholars must be competent in all the components of communicative competence – linguistic, socio-linguistic, strategic, and discourse - in order to produce well-formed utterances and sentences (p.117). It is a linguistic fact that the first language of a person might interfere with the appropriate learning and use of the necessary competencies in the target language. Academic writing is a complex communicative process involving cognitive, socio-linguistic, as well as discourse skills that scholars must develop so as to effectively communicate the results of their research to the global community of English language users.

Writing scientific English within intercultural boundaries (see Ventola, 2007) as those that exist between Africa and the United States, for example, might pose problems for African scholars. The linguistic world is faced with two orthographic/spelling systems – British and American. Many African scholars who sent their papers to American online journals have had their papers returned for correction because of their use of the British autographic system, thus delaying editorial decisions on those papers. Idiosyncratic use of words and phrases by African authors might also impede comprehension of what the author is trying to put across when an American reviewer reads the paper.

Writers become more and more competent and successful in their attempt to get their papers published through hard work and practice. The process of reviewing research and academic papers for possible publication involves ‘peer review, negotiation, revision, and eventual acceptance for publication’ (Gosden, 1995). This process allows an interaction between the ‘novice’ and ‘experts’ in scientific discourse in their areas of learning and expertise respectively. The interaction is rooted in linguistic and rhetorical exchanges among scholarly writers in the academic community. As managing editor of *TAS*, I have been actively involved in this process for more than six years. I am of the opinion that sharing my experience with the scholarly world about what can enhance the chances of African scholars to get published in American online journals is a worthwhile venture. The next section details the research method adopted for this paper.

## **RESEARCH METHOD**

### **Data Source and Analysis**

There are two sources of data for this study: (1) analysis of received articles by African authors since I took over as editor in 2005 till date (see Table 1 below) and (2) feedback from a focus group discussion of African researchers/writers at the Obafemi Awolowo University, Ile-Ife, Nigeria in 2007 (See the list of participants in Appendix A). The journal was publishing four times a year (March, June, September, December) when I took over as editor in 2005, but at AERN’s second annual summit at the North Carolina State University in April 2006, it was decided that as from 2007, the journal would publish twice a year – June and December. Table 1 shows the number of published and rejected articles from 2005 to June 2008.

Between 2005 and 2010, I received a total of 430 articles from African authors from all over the continent, United States, India, and China. During the period under study, 183 articles, representing 43% of total were published; while 247 articles, 57% of total were rejected. In reading and editing the articles, and taking into consideration reviewers’ comments and suggestions, I encountered problems categorized under technological and human problems. By technological problem, I mean articles whose publication decision was delayed or rejected because of problems associated with inability to open the articles with Microsoft Word and articles whose corrected versions could not be resent on time by authors. (Authors often write to ask for time extension citing irregular power supply and Internet down time as excuses). Human problems involve articles whose publication decision was delayed or rejected due to poor grammar, failure to follow publication guidelines, and inappropriate titles, among others.

Table 1: Total Number of Published and Rejected Articles from 2005 – 2010\*

Year	Volume Number	Issue Number & Date	Number of Articles Received	Number of Published Articles	% of Published Articles	Number of Rejected Articles	Percentage of Rejection
2005	5	1 March 2005	25	8	32%	17	68%
		2 June 2005	22	10	45%	12	55%
		3 September 2005	21	9	43%	12	57%
		4 December 2005	21	5	24%	16	76%
2006	6	1 & 2 June 2006	23	9	39%	14	61%
		3 & 4 December 2006	25	10	40%	15	60%
2007	7	1 June 2007	36	20	56%	16	44%
		2 December 2007	33	20	61%	13	39%
2008	8	1 June 2008	35	17	49%	18	51%
		2 December 2008	37	18	49%	19	51%
2009	9	1 June 2009	41	14	34%	27	66%
		2 December 2009	29	15	52%	14	48%
2010	10	1 June 2010	44	13	30%	31	60%
		2 December 2010	38	15	39%	23	61%
TOTAL			430	183		247	57%

Source: AERN Website: [www.africanresearch.org](http://www.africanresearch.org)

\* Percentages are approximate only.

On Monday February 26, 2007, I gave a talk to some African scholars (26 participated, see Appendix A) at the Obafemi Awolowo University, Ile-Ife, Nigeria on the problems that African academic writers face in getting their papers published in *The African Symposium* in particular and other American online journals in general. During an interactive session after the talk, many participants discussed the problems they faced in technological terms, which were mainly what I categorize in this article as technological.

## RESULT

I will highlight the result of this study by concentrating on the rejected articles as a result of editorial decisions based both on technological and human problems.

Table 2: Total Number of Rejected Articles from 2005 – 2010\*

Year	Volume Number	Issue Number & Date	Number of Rejected Articles	Rejection for Technological Problems	Rejection for Human Problems
2005	5	1 March 2005	17	14	3
		2 June 2005	12	8	4
		3 September 2005	12	9	3
		4 December 2005	16	10	6
2006	6	1 & 2 June 2006	14	8	6
		3 & 4 December 2006	15	10	5
2007	7	1 June 2007	16	8	8
		2 December 2007	13	7	6
2008	8	1 June 2008	18	11	7
		2 December 2008	19	14	5
2009	9	1 June 2009	27	15	12
		2 December 2009	14	9	5
2010	10	1 June 2010	31	16	15
		2 December 2010	23	11	12
TOTAL			247(100%)	150(61%)	97(59%)

\* Percentages are approximate only.

As Table 2 shows, 150 articles (61% of total) were rejected by the editorial board of *The African Symposium* for

technological problems. The number is almost the same of 97 articles or 59% of total rejected due to human problems between 2005 and 2010.

## **DISCUSSION**

### **Technological Problems**

Meeting publication deadlines is what every editor would demand from prospective authors. Online journal article writers from many parts of Africa face a plethora of problems that delay submission of their work on time. During an interactive session with some African scholars at the Obafemi Awolowo University, Ile-Ife, Nigeria in February 2007, participants cited prohibitive costs of personal computers, irregular power supply, and inadequate training in the use of ICT hardware, as some of the problems causing their inability to meet publication deadlines. Being at the mercy of the few cyber cafes that could still operate in their localities, authors who did not have personal computers had to queue behind others in order to use the few available functional computers. I gathered that erratic power supply usually caused power surges that destroyed installed computers. In a situation where most cyber cafes were neither registered as a business nor their equipment insured, many owners of such cafes simply folded up due to their inability to replace damaged computers and other hardware they use for business.

At the same interactive session, some authors confessed that they did not actually have computer skills and therefore write in long hand and give to professional typists to assist them type. Again, unless the authors have the money to pay the typists, their manuscripts might not be prepared on time to meet publication deadlines. Very often, because of their inability to use the computer to correct detected errors, computer illiterate authors send their articles with the errors for the editor to figure them out! This obviously would cause the articles to be returned to the author for revision, even before the articles are sent for review. Moreover, from my experience, many authors had sent articles that were inappropriately saved with computer programs that could not be opened by Microsoft Word, the program that is recommended in the journal's guidelines. The articles had to be returned to authors, thus delaying decisions to be made on the articles. Many authors simply did not resend their articles to the editor.

### **Human Problems**

Perhaps the most serious problem I had experienced as editor of *The African Symposium* is the failure of authors to adhere to the *Guidelines for Authors* as laid down in the AERN website ([www.africanresearch.org](http://www.africanresearch.org)). Whenever I receive an article, I will look for the following compliances: adequacy of the title vis-à-vis the content of the article, a succinct abstract, an introduction, and references. Under references, the American Psychological Association (APA) format has to be followed; if not, the article will be returned to the author to fix the problem. Another problem with references is omission of some references that are cited in the content of the article. There have been various ways by which authors have addressed this problem. The conscientious authors painstakingly do the corrections and resend the corrected article within the stipulated time. In many instances, authors will acknowledge receipt of their returned article, but will not do anything to reformat the references but resend the same article to me within 24 hours! Such articles are automatically rejected. Many authors write to acknowledge receipt of returned article and ask for time to reformat, but I will never hear from them again! I think this is part of the reasons why there is a high number of rejected articles.

Since authors realize that *The African Symposium* is recognized by their institutions and articles published therein count towards tenure and promotion, many of them are in a hurry to publish with *TAS*. In some instances, the same authors have submitted more than one article, suggesting that the editor will pick any one he wishes to publish. The problem this practice had caused in the past for the technical editor of the journal includes cross-matching topics with the content of the articles. This problem arises when both articles submitted by the same author are reviewed and recommended for publication. It is needless to say that this practice had since been discontinued. If an author submits more than one article, all of them will be sent back and the author advised to resend only one s/he wishes to be considered for publication.

Another major problem I have encountered is what could be termed incompetent use of the English language by many authors. This includes minor spelling errors to serious syntactic errors of, for instance, subject/verb concord, and inappropriate titles. Spelling errors not only included misspelled words, but also inconsistent use of the British and American orthographic systems. Here are samples:

### **Misspelled words:**

- acomondation (accommodation)
- ocassion (occasion)
- recieve (receive)
- releive (relieve)
- convinient (convenient)

### Subject/Verb Concord

- The samples needs testing (The samples need testing)
- The boy roaming the streets were shot (The boy roaming the streets was shot)
- Such analysis of static variables are not perfect (Such analysis of static variables is not perfect)
- Erickson (2004) as well as his supporters were attacked (Erickson as well as his supporters was attacked/Erickson and his supporters were attacked)
- Neither the teacher nor the students was allowed to leave the classroom (Neither the teacher nor the students were allowed to leave the classroom)

### Inconsistent use of the British and American Autographic Systems

<b>British</b>	<b>American</b>
▪ Colour	Color
▪ Programme	Program
▪ Recognise	Recognize

### Inappropriate Titles

- Perceived Problems Against the Performance of Nigerian Elite Football Referees (Perceived Problems Militating Against Utilization of Nigerian Elite Football Referees in International Competitions)
- An Investigation of Assessment Practices by Teachers Business Education Subjects (An Investigation of Business Education Teachers' Assessment Practices)

From my experience, many journal articles with good chances of publication have been rejected for poor organization and lack of clarity, occasioned by incompetent use of the English language by the authors. Most of these errors are detected by reviewers and their reports are sent to authors whose works were recommended for publication after necessary corrections. If the errors inhibit comprehension, the papers are rejected.

### CONCLUSION AND RECOMMENDATIONS

There is no doubt that the African author faces both technological and human problems, which adversely affect their research productivity. Most African countries, their institutions of higher learning, and research outfits have not provided adequate ICTs to support online publication. In addition, many promising articles become unpublisheable due to improper attention paid to how the English language is employed to convey meaning to the wider English language reading public. The African scholars and the international community should collaborate to solve some, if not all, the identified problems in this study.

- African scholars working in colleges and universities should be exposed to the skills of grant writing in order to access billions of dollars made available by various foundations all over the world and procure needed computers and other soft wares.
- Accessing relevant information about these foundations and organizations requires computer literacy of the African scholar and availability of ICTs in order to benefit from numerous resources available on the Internet. African scholars can be computer literate if they endeavor to attend computer literacy programs and workshops wherever they are organized in their localities.
- Funny as it may seem, scholars may form cooperatives, save some money from their monthly salaries, and borrow money for the cooperatives to purchase computers and associated hardware like printers, scanners, and other technological paraphernalia that might give them open access to the Internet and enhance their research productivity.



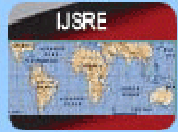
- African scholars should adopt collaborative research efforts whereby at least a colleague who is competent in the use of the English language is a partner in the team. This will take care of many of the linguistic problems that delay editorial decisions or that may lead to outright rejection of articles.
- In single-authored papers, write ups should be shared with linguistically competent colleagues to vet the writing before they are sent for review.
- Perhaps the easiest thing to do is for authors to strictly adhere to publication guidelines of the journals to which articles are sent for publication consideration. It is curious why many authors simply fail to do this, even after initial reviews by the editor and advice of what is required of them.
- Authors should be mindful of deadlines and set up a convenient time frame and do a thorough revision of their writings before sending them for review.

It appears that the international community is assisting Africa to initiate improvements in connectivity and networking on the African continent. According to UNESCO (2003), the 'Regional African Satellite Communications Organization aims to carry all satellite traffic within Africa through co-ordination of satellite capacity, and Africa One, an AT&T project, aims to lay optical fiber cable around the continent with gateways to all the coastal countries interested' (p.3).

- It is hoped that this trend will continue with provision of adequate financial and human resources by individual African countries to complement the efforts of these and other initiatives.
- The international donor agencies and research institutions should urgently assist African scholars with grants to purchase computers and associated soft and hardware.
- More importantly, there is need for training of African scholars in Information and Communication Technology through computer literacy workshops. Through ICTs, interactivity and accessibility of research among scholars will be enhanced in that networks could link schools, libraries and research centers around the globe.
- Moreover, grant-writing workshops should be organized and financed by research institutes to assist African scholars become more productive.

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## Agriculture and Transportation in Rural Social Transformation

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### Abstract

This paper theoretically evaluated the role of agriculture in rural social transformation. Agricultural development in most countries is a necessary precondition for economic development whereas Nigeria has lost its value for agricultural production because of the oil boom. We argue that the potential of agricultural technology in form of fertilization and irrigation techniques, depends on the extent to which governments can formulate and implement adequate policies that will create employment for national development.

**Keywords:** Agriculture, Transportation, Rural, Social, Transformation, Economy, Employment, Nigeria

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### INTRODUCTION

In most developing countries, agricultural and food productions have fallen behind rising demand (Eghbal, 2009). Nigeria is one such country, where agricultural output has decreased not only relatively but also almost absolutely. Between 1970 and 1977, per capita agricultural production fell by 1.5 percent per annum and food production per person declined by 13 percent. This sharp decline in agricultural output is accompanied by an attending productivity decline from 82 percent (excluding oil) in 1960 to 66 percent in 1977-1979. These declines in production and productivity suggest that the average level of food consumption has also decreased. Agricultural development in most countries is a necessary precondition for economic development unless countries are fortunate enough to have other resources that can be used to finance food imports. While Nigeria does have oil resources, the high-level economic activity generated by oil revenues has not ameliorated the overall weaknesses in the economy. Nonetheless, since the late 1960s, the country has developed a mono-economy based on oil, a non-renewable resource (Filani, 1993).

Employment in the capital-intensive oil sector is limited. Thus, it is important to recognize the significance of agricultural sector employment on which the vast majority (nearly 70 percent) of the poorest people depend. These people are generally found in rural areas and engaged in subsistence agriculture. Given the centrality of this sector to so many, if



development is to take place and become self-sustaining, it will have to start with agriculture. An adequate food base is also a necessary precondition of such development (Madu & Umehali, 1993).

The purpose of this paper is to highlight the role that agriculture is expected to play in development and to examine patterns of agriculture in Nigeria. This paper looked at the constraints that inhibit the agriculture sector and examine the transportation of agricultural products from rural areas where they are produced to different parts of the country. It should be noted that in this paper agricultural products refer to crops like cotton, cocoa and palm kernel that are produced mainly for export; while food products refer to those crops grown and consumed as staple foods within a country. In the case of Nigeria, food crops include maize and cassava, among others. There are also a number of overlapping items like rice and groundnut that are used for both internal consumption and export.

## **The Role of Agriculture**

While the importance of agriculture in development has been dealt with extensively in development literature, there are differences of opinion as to the role that agriculture should play. The prevailing view, that which can be deemed the integrative approach, sees agriculture as an equal partner of industry and other sectors of the economy. When agriculture becomes more efficient and production is increased, a release of labour from the agricultural sector requires a reciprocal ability by the industrial sector to absorb this labour. If the release of agricultural labour is not absorbed by industry, development problems can occur (Isabio, 2009). The United States and Japan are demonstrative of this view in which agriculture is often said to bear the burden for the capitalization of industry (Filani, 1993).

In their study of the role of agriculture in economic development, Tsigas and Ehui (2006), find that agricultural development supports economic development in five major ways. First, economic development increases the demand for food, and the failure of the agricultural sector to increase the food supply can impede development. Second, the export of agricultural products can garner the foreign exchange and currency necessary for development. Third, in the case of peasant economies and dominant economy, agriculture provides the necessary capital for investments in social investments and industry. Fourth, the agricultural sector supplies a major portion of the increased labour needed at times by the industrial sector. Fifth, the cash income of the agricultural population can enlarge the size of the domestic market for the manufacturing sector. The United States, a highly developed country, is again illustrative of this approach.

In contrast to the integrative view, most developing countries embrace what might be called an exploitive perspective. Rather than emphasizing agriculture or accepting it as an equal partner with other sectors, agriculture is viewed as a subservient sector to be exploited for urban industrialization. The urban industrial sector depends on rurally-produced food and agricultural supplies, yet the agricultural sector is otherwise ignored. The income earned by farmers is meagre compared to that of their counterparts in urban sectors; an income disparity that results in the out-migration of rural masses to urban areas in search of better economic opportunities (Isabio, 2009; Tsigas & Ehui, 2006).

According to Dimaranan and McDougall (2006), the rural sector requires sufficient investment so as to maintain healthy development, and unless this investment is made, the exploited agricultural sector will deteriorate and create serious obstacles to development. African governments have spent pitifully small portions of their expenditures on rural and agricultural development” and even when they do allocate funds to agricultural and food programmes, they expect quick results. They fail to understand that development is a gradual process which needs not only investment but also a concrete foundation which itself requires time to mature. The unhealthy or lagging development in many developing countries in Africa can be seen as one of the consequences of inadequate investment in the agricultural sector. This appears to be the case for Nigeria. This will be elaborated on later.

Another approach related to agriculture and development that merits consideration is the “Stage theory of development” propounded by Organski (1965) and Rostow (1971). This approach has gained broad recognition and influence in development literature. It has also been subject to much criticism, particularly the “take-off” point of development. For developing countries currently pursuing the exploitive approach, Rostow’s stage theories of development may have some bearing.

Fishlow (1996) has summarized Rostow’s propositions as: (a) successful industrialization is unbalanced in the sense that a single, or limited number of industries, are the source from which an initial acceleration ramifies through the economy. There is a consequent discontinuity in manufacturing production; (b) leading sectors have three paths of influence on the economy: forward, lateral and backward linkages, of which the latter has dominated historically; (c) certain industries have played the role of leading sector in a number of different countries, notably the railroad; (d) the development of certain subsidiary activities - coal, iron and machinery - is a good index of the extent of industrialization and the probability of its continuation; and (e) industrial, rather than agricultural, growth affords the initial basis for sustained development (Fishlow, 1996). Fishlow goes on to point out that the examples used by Rostow to establish one or more of his points are grossly miscalculated, and that the aggregate approach to take-off has likewise not fared well. Similarly.

In his notion of the nature of the transition, apart from the problem of 'take-off,' Rostow (1971) states that a society dominated by agriculture, with 75 percent or more of its work force in agriculture, must shift towards industry, communications, trade and services. Such propositions from the stage theories have seemingly influenced many African countries that have opted for the exploitive approach to development. From the perspective of comparative advantage, they may have assumed without proper assessment, that it would be better to invest in industry than in agriculture in order to industrialize and so the agricultural sector was neglected.

From Rostow's work it is important to grasp that now developed nations, in their process of development, sequentially passed through the stages of development (as a process). They moved from nation building, to industrialization, to welfare states as in Britain, or social security states as in United States, to advanced technological societies. Adjustment to each stage occurred gradually during the process of development.

Less developed countries (LDCs), such as those in Africa are experiencing telescopic development in which all the stages are taking place at the same time. This limits investment in any particular sector and creates inefficiency in all of them. The development of all the sectors simultaneously does not permit a proper adjustment between various sectors of the economy because the resources required by each are limited given the generally struggling LDC economies and the competition for resources. As such, it is essential to determine which sector will most benefit a developing country, such as Nigeria, in the allocation of limited resources. The starting point of African countries, including Nigeria, is different from that of developed countries in that most developed countries have passed through feudalism and had well established agricultural systems before industrialization occurred. Most African countries and those that are south of the Sahara, in particular, began their drive for industrialization at a time when their agricultural sectors had not yet emerged from a subsistence system of agriculture. At the same time these countries face a number of other problems in agriculture including inadequate education, pollution, the use of primitive implements, and poor soil and climates, all of which also require immediate attention.

### **Patterns of Agricultural Change**

In discussing the role of agriculture in development, most developing countries, as noted above, have opted for the exploitive approach in which agriculture is rendered subservient to the urban industrial sector. It has also been noted that the neglect of agriculture is far from an advantageous strategy for improving the social and economic welfare of the population. This is because population growth is often higher in less developed countries necessitating more food and food production. Since economic resources are limited, inadequate investment in agriculture might result in a decline in both production and consumption; or at best an inadequate increase in production. At this juncture it is important to examine patterns of Nigerian agricultural change so as to be able to assess the role of agriculture in Nigeria. Agriculture was Nigeria's primary economic resource before the discovery of oil in 1956. The production of export crops by peasant farmers was the mainspring of economic growth from 1900 to 1965. This growth was made possible because of colonial trade which led to the construction of railroads and seaports to coordinate easy transportation of export crops and staple foods from the hinterland (Guglar & Flanagan, 1978). By the early 1970s agriculture still contributed about half of the national income and provided employment for 70 to 80 percent of the labour force. Agricultural commodities provided 48 to 56 percent of export income and were important sources of public revenue through the taxation of these crops, the profits of marketing boards, the cattle tax, and other taxes in general. The country's economic needs and foreign exchange requirements were met almost entirely by peasant farmers, whose earnings financed the development of infrastructure, built schools and hospitals, and supplied capital for new industry. As communication was improved by the colonial administration, production for internal trade expanded with an persistent emphasis on the production of crops for export (Mongabay, [n.d.]; Collins, 2010).

A study of Nigeria between 1948 and 1952 identified four types of agricultural economy during this period: the (1) basic subsistence economy; (2) internal exchange economy; (3) peasant export-production economy; and (4) plantation economy. The subsistence economy was and still is found throughout regions of Nigeria, but its relative significance varies. The importance of the subsistence economy was greatest in the Benue and Plateau (former middle belt) areas of the North, and least important in the cocoa areas of the Western region. The cocoa areas depended on food grown elsewhere in Nigeria. The Yoruba cocoa belt, especially, has long been food-deficient which may be explained by the fact that the region was and still is predominantly engaged in cocoa production. It should be noted that the contrasting environment and climate in the North and South parts of Nigeria also influenced variations in the types of agricultural products grown in these areas. Improvements in transport facilities rapidly changed the mining centres and encouraged the internal exchange economy (Collins, 2010). Commodities produced for internal trade included guinea corn and cattle in the upper North and yams in the Benue/Plateau areas. Palm oil was produced in the East and Kola-nut in the West. More specialized crops such as rice and fruit were grown in both the North and South. According to Buchanan and Pugh's findings, the prosperity of areas depended entirely upon production for the internal market. Miscellaneous agricultural

products, like beans and onions, worth 3,000 and 1,000 tons of yarns respectively, were often railed from station to station for sale. The main crops of the export-production economy included: (1) cotton and groundnut centred in Kano city; and (2) bean seed and soy beans in the Benue province of the Northern region. In the South they produced perennial tree crops, such as cocoa in the West, and palm produce and rubber in the East. The fourth and last type of agricultural economy, the plantation economy, was of minor importance and was developed only in the coastal districts of the delta areas of Nigeria. These small estates were largely owned by European trading companies (e.g. United African Company) and a few Nigerians.

Generally speaking, most Nigerians are still peasant farmers producing their own food crops and deriving income from one or more cash crops as well as from the sale of surplus food crops. The main food crops grown in the South and Middle Belt are yams, cassava, rice, and maize, while the main subsistence crops of the far North are guinea corn, millet, cassava, and rice. Export crops, such as oil palm, cocoa, and rubber, are grown in the South while groundnut and cotton are grown in the North. It is important to mention as well that fishing is mainly done in the delta parts of the South and the demand for fish in Nigeria is estimated at over two million tons a years (Nwabueze, 2010). Since fish has high protein content and since there is marked protein deficiency in the Nigerian diet, there is a great need to step up local fish production. Unfortunately, oil exploration and pollution have created a situation such that most fish historically found in the creeks have migrated to deep sea waters. This has meant much smaller catches for local fishermen who cannot participate in deep-sea fishing. The local fishermen lack both the implements and knowledge needed to use the technology that deep-sea fishing demands.

The agricultural sector in Nigeria largely consists of smallholder families, estimated to number between five and six million, who in the 1990s produced 90 percent or more of the country's agricultural output (Ogbuigwe, 1996). Farming methods followed traditional practices, and productivity was low relative to the country's potential. This is because most farmers still used traditional techniques and farming implements generally consisted of the hoe, the axe and the machete. While the contribution of the smallholders was significant, it does not imply that they met the country's total food needs. The supply was still far less than the demand. The average area cultivated by a smallholder ranged from less than half a hectare to over two hectares. The size depended largely on the amount of land that could be cleared and farmed by a family and the type of crop grown. Mixed cropping on the fields, which rarely exceeds 0.4 hectares (one acre) in the South or 1.2 hectares (three acres) in the North and extreme dispersal of holdings are characteristic features of farming in the country. In some areas with agricultural extension services, the use of fertilizers and pesticides was introduced, but even then the individual illiterate farmer was not taught how to use the inputs properly. As of 1981, the total number of farmers who used inputs remained small. The system which most farmers still employ is primitive, and includes clearing the farmland by fire, fertilization by wood ash, cultivation with simple hand tools, the absence of stumping, and usually the absence of draft animals or other livestock. They also employ forest fallows or field forest cultivation instead of true shifting cultivation. True shifting differs from forest fallows in that in the former, fields are rotated around a settlement and the cultivator generally does not shift his place of abode. This is practiced in most parts of Africa, including Nigeria (Whitaker, 1982).

## **Government and Agricultural Development in Nigeria**

Thus far, this paper has looked at the general role of agriculture in development and patterns of agriculture in Nigeria. It has shown the contributions of agriculture to the Nigerian economy, those of offering employment to many, producing the greater part of the food consumed by the nation, and generating foreign exchange in the 1950s and late 1960. Given adequate attention and improvement, the sector still stands to recoup a great deal of the funds currently spent on importing essential food commodities (Todaro, 1977). That is, adequate encouragement of the agricultural sector would increase production so that only those food items in short supply or not available would need to be imported. This is not to suggest that the government has failed to give the sector any consideration, rather that it has given it relatively little consideration compared to other sectors of the economy. Consequently, it is necessary at this point to briefly examine the developmental efforts made by the government.

In 1966 the Food and Agricultural Organization (FAO) (1966) concluded that the prevailing system of bush fallow in Nigeria is too slow for the future needs of the country in light of increased population densities, the rising need for foodstuffs, and the need to improve rural incomes and living standards. With respect to agricultural crops, the agency stated that even though Nigeria barely maintained its position as a world supplier of cocoa, there might be an outlet for nearly 200,000 additional long tons of cocoa by 2000; with a vigorous production campaign, its share of world exports might be increased.

Thus, in 1976, the then Federal Military government launched Operation Feed the Nation (OFN), a food production development programme. The basic objectives behind the development effort were:

- (a) Ensure the supply of food for the human population and feed for animals;
- (b) Increase agricultural incomes with agricultural programmes such as the National Accelerated Food Production Programme (NAFFP); and
- (c) Earn foreign exchange (NYSC, 1979).

The first objective stands as the major motivating factor behind the introduction of Feed the Nation. The second objective involved making improved technologies readily and easily available to the farming population. Adoption of these technologies was expected to result in increased yields for crops and livestock, thereby making more produce available for the farmers to eat and sell. This, in turn, would create the rural purchasing power required to buy new manufactured goods and generate rural savings, which could be mobilized by direct or indirect means to finance industrial development. In terms of the final objective, the produce obtained from Operation Feed the Nation was to serve as a foreign exchange earner by increasing the nation's export power while keeping down importation of essential food crops. It was hoped that inputs such as fertilizers and machinery could be used to produce essential food items cheaply and in this way money would be saved for additional future investments. This assumed, however, that the inputs were adequately utilized. Unfortunately, despite the planning and expenses, the OFN programme was declared a failure. This will be dealt with in greater detail in the Problems of Agriculture section below.

In early 1980, the civilian government of President Alhaji Shehu Shagari announced a new agricultural plan. The plan was drawn up by the Nigerian and International Bank for Reconstruction and Development (Alhaji Gusau, 1981) and labelled the "Green Revolution." The effort was designed to make Nigeria self-sufficient in food crops in five years and industrial crops in seven years. Increased expenditures on agriculture (about 13 percent of the total capital investment of federal and state governments) were projected in the fourth national development plan announced in early 1981 (Federal Republic of Nigeria, 1981). This plan was expected to generate an annual production growth of four percent. This being a reasonable investment, Nigerians would have to wait to see if it produced results given the prevailing problematic circumstances.

### **Agricultural Sector Problems**

The factors negatively affecting Nigeria's agricultural production and food self-sufficiency are many, but certainly include (1) inadequate investment in agriculture compared to manufacturing; (2) a lack of education and training among smallhold farmers; (3) population drift from rural to urban areas, leaving an aging farm labour force; (4) disruption caused by drought; (5) inadequate and ineffective extension services including the inadequate supply and erratic availability of inputs and other farm-support services; (6) inadequate infrastructure; (7) wastages incurred; (8) unpreparedness and confusion; (9) population pressure; (10) land tenure; and (11) inadequate credits and capital. These challenges are by no means exhaustive, for there are many others that have linkages in the Nigerian developmental structure. What we shall do here is attempt to discuss some of the problems already noted in this limited paper.

Nigerian government, like other African governments, favours Rostow's stage theories of industrialization over developing a solid agricultural base. This might be explained, in part, by the fact that since indigenous rule in 1960, when agriculture was handed over by the colonial administration, the emphasis has clearly been on the petroleum industry. This emphasis contributed to mass rural unemployment (Todaro, 1977; Mongabay, [n.d]), since urban areas were more favoured in terms of incomes and social amenities. Many young graduates migrated to urban centres to look for better employment, leaving agriculture to the aging labour force. These factors were instrumental in the resulting short fall in agricultural and food production. Rejuvenated investment in, and adequate encouragement of, rural agriculture today would play a major role in revamping the much needed food production. By adequate encouragement we mean education and training of the smallhold farmers, incentives for young graduates to participate in the sector, and the importation and equitable distribution of inputs to farmers.

In a December 1981 conference organized by the Nigerian British Chamber of Commerce in London, Dr. John Stevens of Knight, Frank and Rutley stated that the blame for sectorial failure was often, and unfairly, laid at the door of the small farmer. He went on to say, "in my experience, and this is a point that should not be lost on British suppliers, the traditional farmer is receptive to new ideas when he can be shown the improvement they bring," (West Africa, January 4, 1982: p. 17). He concludes that Nigeria's future lay in the hands of its small farmers who were once responsible for 90 percent of all agricultural production. Output can once again be increased with the introduction of modern farming techniques that can be applied to both large and small farming units. Indeed, education and training, "in which British suppliers could play a major part," and better marketing and distribution are vitally important. Large farmers alone will not be able to ameliorate the continuing food shortages (Norman, 1981).

It is important to note that the literacy rate in 1970 was estimated at 25 percent in Lagos and Western Nigeria, and among some sections of the Eastern States of Southern Nigeria. Estimates for the country as a whole put the literacy rate at this time at 10 percent (Area Handbook, 1972). The higher literacy rates in Lagos and Western Nigeria can be

attributed, in part, to their comparatively higher urbanization levels (Adepoju, 1980). The low level of literacy for Nigeria as a whole clearly shows that most people do not have any (or have very little) formal education. As such, learning about fertilizer application, the operation of new machinery and other modern techniques without any further training may be problematic. Thus, what is required is an integrated adult education programme whereby an application of agricultural inputs and farming techniques would be taught and rendered understandable to those with low literacy and/or little formal education. Rather than such programmes, the government has, to date, been emphasizing large-scale farming which requires high level manpower. While necessary, this alone will not engender a long term agricultural transformation. A long term programme is needed that addresses both the needs of the nation in terms of food production and exports and the needs of farmers (both large and small).

Rapidly growing population densities are also having a profound effect on farming systems (Norman, 1981). Initially, farmers responded to governmental incentives to increase exports (as indicated earlier) and cash crops by expanding the area cultivated. However, in many areas of the South, rising population densities eventually placed a limitation on this strategy. Thus, increasing population densities not only mean more mouths to feed but progressively greater pressure on farming systems that were originally designed for abundant land. Under the pressure of increasing population, there has been a shift in recent decades from more extensive to more intensive systems of land use in virtually every part of the underdeveloped regions. In some parts of the world, cultivators under the forest-fallow system have been unable to find sufficient secondary forest (Boserup, 1965, p. 16). She goes on to say, however, that even with a rapidly growing population, there are ways in which the fertility of the land can be changed or improved. These include irrigation and fertilization, or simply put agricultural technology. While Boserup is accurate in her observations, she does depend on adequate simplified agricultural technology that can be understood by the vast uneducated rural population. The simplification of farming processes and transformations, in contrast to what most developing countries habitually apply, in turn depends on good planning, education, incentives and training of the small farmer. Unless this latter path is followed, growing populations will undoubtedly continue to wreak havoc on traditional farming outputs.

Lack of agricultural credit is increasingly also singled out as a major handicap. While institutional credit has been available to farmers for the past two or three decades, it has met with little success. The institutions that allegedly help to improve farming technologies and support systems - input distribution systems, extension and credit services, and product marketing programmes - have favoured export cash crop production to the exclusion of domestic food crop production. According to the World Bank (1994), commercial banks have extended credit to some large-scale plantations but not to small farmers and agricultural cooperatives reach less than five percent of the farming population. It is very difficult for poor farmers in rural areas to obtain loans from commercial banks, when the individual farmer often lacks adequate security in the form of land, personal dwellings or other assets. There is a National Agricultural Credit Bank administered by the government (World Bank, 1994), and designed to lend money to farming projects with credit to be administered by the states or state institutions. While the idea is impressive, such loans most often go to political supporters of the government in power who may or may not pay back the loans. Thus, in most regards rural farmers do not benefit from the government or from commercial banks. It is consequently reasonable to suggest that small farmers should organize to form local cooperative societies to generate credit on their own and to amass the potential to obtain loans needed from commercial banks or the government.

Another significant challenge is the land tenure system in Nigeria. Land tenure systems vary among ethnic groups but a common feature is the absence of individual ownership. In the coastal states of the South, land is regarded as the joint property of the community and the right to cultivate is given to individuals by the traditional head of the community (World Bank, 1994). In the fallow period, land reverts back to the community, although trees are regarded as the property of the man who plants them. Such a system can discourage individual investment in conservation and improvement. This also makes it difficult for a farmer to obtain loans using his land as security. In the Northern states, land is owned by the state and tenure is based on the custom whereby the emir has the authority, a system that leads to friction between herders and farmers (World Bank, 1994). Today there is a need to change land legislation so as to help the transition to individual tenure and policies to promote improvement of commercial grazing areas. There has been a land use decree promulgated by the Military regime, but it does not protect the small farmers as authority is still vested in either the emirs or the community.

In our discussion of government development efforts we noted that Operation Feed the Nation was deemed unsuccessful. This was due to wastage incurred, inadequate resources, and a lack of preparedness, including the fact that the launching of the programme by the federal military government took most people by surprise. The time between the conception of the programme and its inception was so short that no adequate planning was possible. The main problem resulting from this was the wastage that was incurred during the first year of operation. For instance, apart from the awareness of the food shortage problem that was created, full benefit was not realized from the over six million naira (Nigerian currency) spent on student salaries. As soon as the programme was announced and launched, university students were drafted to go to the farms. They were each paid two hundred naira a month. Unfortunately most of them were not

interested, while others did not know how to cultivate. The result was a great deal of money for very little productivity. Apart from this, a colossal amount of imported fertilizers went unused. Had the programme been directed at small farmers with good incentives, the results would likely have been more positive.

The organization of the programme appears to be good insofar as it conformed to extension principles, but it was not well planned or implemented. There were also inadequacies of resources, including capital, manpower, time and material inputs such as seeds, experienced by the many committees created for the execution of the programme. The result of the overall poor planning was a general sense of confusion throughout the period. Some committee members did not know what to do, while others just hung around waiting for seeds. It is logical to expect that since the planning was deficient, the implementation would be equally lacking. There was generally a lack of preparedness and confusion. It was the failure of that programme that led the civilian government (that took over from the military government) to change the plan and rename it the "Green Revolution". The Green Revolution programme has been executed elsewhere (e.g. Latin America, Asia, and Mexico) under different names since the 1950s (Norman, 1981). It is fair to expect that if the programme is well planned and executed (by considering the small farmer as an important part of the programme) it will give a solid base to national agricultural productivity. The training of the small farmer on how to use inputs, the importation of more inputs, and the distribution of them to the farmers are all essential here.

## **Transportation**

This paper has so far examined agriculture as a basic source of rural employment and a provider of food and income. This paper now moves on to discuss agricultural transportation in Nigeria. Agricultural products cannot be spread without an effective transport system. However, Nigeria is still a developing country and so has not perfected its present transportation system. While the majority of the population still lives in the rural areas, with the construction of modern roads, linkage between the urban and rural areas are being created. However, there are many rural areas that have not been connected to towns because of a lack of motorable roads. This is due, in part, to the high cost of road construction materials, and in part to the systems of waterways in some areas. People in these areas still depend on locally made canoes/boats to travel/move from their villages to the nearest urban centre. Transportation systems must be furthered improved so that the people in these areas can acquire modern and adequate standards and quality of living.

In examining the role of transportation in moving agricultural products from the rural areas of production to markets and other points that they are needed, the questions that emerge include what is transportation; what are the different transport systems; and what are their different roles in Nigeria's rural social transformation? Transportation can be defined as the means or system of conveying goods and services as well as passengers from one place to another. Such movements from one place to another can be through land using the roads and rail, through the sea using canoes, boats, launches and ships as well as the use of the air.

## **Road Transportation**

Road transport has been one of the major means of moving goods from place to place. It plays a vital role in the evacuation of agricultural produce to the ports, and links villages and towns as well as other settlements for easy communication. Road transport continues to be the major means of transferring passengers and goods in Nigeria for the following reasons:

- (a) There are sizeable and diverse vehicles for use by road, including bicycles, motorcycles, cars, buses, lorries and tippers both for hire and individual purchase.
- (b) Roads connect many parts of the country, although there are still many villages that are yet to be connected by this means.
- (c) Even though the cost of road construction is high, efforts are being made to build more roads for the easy movement of people and goods.
- (d) Road transport is faster in conveying goods and passengers across short distances.

Nonetheless, the food producing rural areas are still isolated to the extent that there is a wide disparity in the prices of food stuff, especially between rural villages and urban towns. This is because many villages are yet to be connected with accessible roads to the towns. Also, as a result of the topography of the roads, accidents occur often, especially on the highways.

Apart from cars, lorries, and buses used on the road, there is rail transport in Nigeria. Rail networks link many part of the country with the two major ports at Lagos and Port Harcourt. The major towns linked with rail lines include

Lagos, Abeokuta, Ibadan, Ilorin, Kaduna, Zaria, Kaura Namoda, Maiduguri, Makurdi, Enugu and Port Harcourt. The advantages of the rail transport are that:

- (a) Accidents are not common;
- (b) Trains carry a large quantity of goods and people;
- (c) Goods are weighed and charges are standardized;
- (d) Goods are transported by experts;
- (e) Transport fares are relatively cheap; and
- (f) Trains are good for transporting bulky goods over long distances.

### **Air Transportation**

One of the most efficient and reliable means of transport in Nigeria is air transport. The impact of this means of transportation has been great. As a result of its inherent advantage of speed, the system has played a great role in the movement of goods and people and this has contributed to the country's socio-economic development. This system of transport includes both cargo and passenger planes. While air transport is a relatively new means of transport in Nigeria and it can be very costly, its advantages include speed, smooth journeys, a reduction in the handling of goods, success in carrying fragile goods, and its utility for long journeys.

### **The Relationship between Transport and Rural Economic Transformation**

There are three major conflicting views on the relationship between transport and rural economic development. The first school of thought sees transport as a precondition for economic transformation. This argument is based on the following:

- i. Transport facilities help to promote the marketing of products by linking production and consumption centres.
- ii. Transport helps to open up new areas by overcoming the friction of distance
- iii. Good transport systems make the distribution of goods and services easy and reduce the costs involved in the exercise.
- iv. The extension of transport facilities to rural areas helps to communicate awareness of new capabilities to a greater proportion of the population.

The second school of thought holds that transport improvement is a concomitant of economic development. This means that, like any other movement, transport facilities expand in response to the needs of development not as a precondition. The proponents of this view therefore caution against "overinvestment" in transport facilities. The third view sees transport investments as constraints on development. This view believes that transport becomes an impediment to economic progress when it absorbs funds that can be more productively utilized in other sectors that are likewise starved for funding. While divergent, these schools of thought all highlight the interrelationship between transport and economic development.

### **Sea Transportation**

The sea transport system is a major area of transportation and enables movements of goods and services as well as human populations from one area to another. This system allows both local movements and international movements. People who live in the south-south and to some extent the south-west and parts of the north tend to use the sea transport system in Nigeria locally.

The sea transport system involves the use of locally made canoes as well as modern ships. In the riverine areas of Nigeria, communities like the Ijaws continue to rely on locally made canoes for travel and fishing. Paddles are used to move the canoes from one place to another. While these small boats can ply small creeks and the banks of some deep seas, they are not used in the oceans. Those who travel beyond certain nautical miles into the deep sea, use bigger canoes that can withstand the waves of the rougher deep seas. As stated earlier, fishing, trading and some commercial activities are transacted between towns and villages that are not too far apart. This is made possible by locally made boats. Apart from these local boats, transportation is also undertaken by modern ships. Modern ships carry heavy goods from overseas to Nigerian ports and vice versa. Although people use ships for transport, this system is mainly used for the transportation of heavy goods.

## CONCLUSION

This paper has endeavoured to present the role of agriculture in development in general with a specific focus on agricultural patterns in Nigeria. This paper has examined different approaches to agriculture and contended that the integrative approach (where agriculture and industry are considered equal partners) is embraced by the now developed countries, while developing countries still seem to emphasize the exploitive approach. This latter approach encourages the exploitation of rural agriculture for the benefit of urban industrialization. As a result, rural areas are neglected and young people feel compelled to migrate to the cities in search of improved economic conditions. Following this out-migration, agriculture is left to the aging labour force.

This condition, the aging rural labour force, as well as a lack of proper investment, the ongoing use of primitive methods of farming, population pressures, climate, and land tenure systems have all contributed to a decline in per capita agricultural and per person food production. This paper has illustrated that investment in agriculture was comparatively lower than investment in manufacturing. Despite these statistics, the government has put some effort into trying to improve the country's agricultural systems. Due to a lack of planning and subsequent poor implementation, however, this effort was not successful.

Citing Boserup's argument, which posits the potential of agricultural technology in form of fertilization and irrigation techniques, the authors of this paper opined that this potential depends on the extent to which governments can formulate and implement adequate policies. That is, adequate policies and programmes that will enable the uneducated masses to understand new farming techniques. Such a transformation will be a gradual process rather than a quick solution, as the military government sought. The training and education of farmers should not be seen in terms of short term goals, but in terms of long range benefits and goals.

While it may be argued that agricultural and industry should be seen as equals, such a perspective appears inappropriate for Nigeria and other developing countries. This is because of the chronic and severe scarcity of resources. Limited resources cannot produce significant result. For instance, under the prevailing poor economic conditions, the piecemeal allocation of resources guarantees insufficient production. Emphasis must be placed on agriculture where most people will reap both immediate and long time benefits. As agriculture is gradually transformed, other sectors will slowly follow.

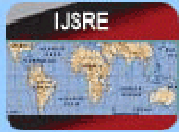
Transport is essential to the movement of agricultural produce from the rural areas to urban centres. This paper has argued that the road networks linking rural areas to cities and towns are inadequate for the marketing and circulation of food products. We therefore call on federal, state and local governments to improve the condition and extent of roads for the easy movement of these necessary commodities. As the use of planes for the circulation of foodstuffs will be too expensive, rail transport also needs to be emphasized and encouraged. Locally made canoes should also be encouraged, possibly with the application of modern engines to enhance the boats. This will hasten the movement of foodstuff from non-road areas to urban markets and centres.

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## Youth Empowerment for National Development

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### Abstract

The responsibilities of youth have changed significantly in recent years. It is imperative, now more than ever before, that young people be prepared for the future task of advancing national development objectives, especially in developing countries. Rather than focusing exclusively on youth and national development, which tends to place the considerable burden of advancing their country's standing and capacity on the shoulders of the young, this study examines youth development. In this context youth development refers to the role of society in empowering youth for future leadership challenges. Emphasis is placed on preparing young people for future national and regional development challenges which requires equipping young people with relevant information so as to ensure that they have an adequate scope of reference and in turn an ambitious vision for the social, economic and moral growth of society. This paper also discusses the role of various public institutions in the development of the next generation's knowledge and capacity to positively influence the values, motivations, behaviours, character and actions of their environment. It is the view of this study that this perspective, examining the role of society in terms of the development of youth, is more rewarding than traditional approaches as it places the processes by which youth acquire competencies to meet future leadership roles at the centre of its analysis.

**Keywords:** Youth empowerment, National development, Youth competencies, Growth Value, Social capacity, Youth programmes, Leadership, Economic contribution, Skills acquisition, Education, transformation, Development challenges.

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## INTRODUCTION, RATIONALE AND PURPOSE

There are many phases in a person's lifetime which revolve around age: infancy, adolescence (which includes the teenage years), adulthood and old age. Youth encompasses that segment of the population that falls somewhere between childhood and old age. In this regard it is possible to see those between the ages of 0 and 13 as being in a period of nurturing, the stage of forming the values that will shape their behaviour through life; those 14 through 49 as being in the period of acquisition; from 50 to 59 as the period of consolidation and 60 and above as the period of reflection and accessing earlier

contributions to society (Eresia-Eke, 2004). The focus of this study is on children and young adults below the age of 21. This category has been chosen because of their greater capacity to be positively influenced.

In basic economics one is taught that the working age population is those between the ages of 15 and 65. Consequently, youth are thus at the core of the working population in any society. In Nigeria they constitute 50% of the total population and 70% of the working class. In terms of youth and national development, we can thus appreciate how youth have become the engine that drives progress. When a society is developing and the economy is buoyant, young people are among the greatest beneficiaries. As a corollary, the resources dedicated to youth education, training and advancement will wane significantly if the economy is in recession.

Nigerian youths face a number of obstacles on their path to independence and prosperity. They often must endure chronic unemployment, delayed marriage even among well educated and gainfully employed men and women in their late thirties, for various reasons including fear, and inadequate and limited educational opportunities. It is possible, when visiting any Joint Admission and Matriculation Board (JAMB) Centre or post-secondary campus to detect a general decay in moral standards and school infrastructure.

Whatsoever that is wrong with Nigeria is also wrong with Nigerian youth. The irony however is that young people in Nigeria are not as alienated as it may seem. Throughout Nigerian history, Nigerian youths have been vocal and at the fore in almost all spheres of life. The majority of Nigerians voted into public office at any given time are youth and people still in their youth, including General Yakubu Gowon, Murtala and Obasanjo (during his first tenure) have ruled Nigeria. Youths have presided over state governments, become ministers, and been members of various legislative houses and local governments. Outside of politics, youths are captains of industry, intellectuals, religious leaders and traditional rulers. Thus we can surmise that the youth are not just the leaders of tomorrow, but that they possess and have long provided substantial leadership in all spheres of life.

Nonetheless, as an instrument of development and as a segment upon which society can manifest its hopes and aspirations, we have begun to doubt if Nigerian youths are equal to the task. In the light of this argument, this paper will now turn to the topic of youth development.

## **What is Development?**

Originally, development was thought to be any positive change in income levels that would move a society or nation from a lower to a higher income level over time. Closely related to this economic understanding of development is the concept of modernization, which reflects a certain level of material change in those nations or societies under study. Current definitions, however, also consider distributive justice and socio-economic transformations when gauging the level of development. It is not enough to restrict development to the magnitude of income or possessions; development must also include how well these are distributed among the population and how society is fairing in terms of access to and opportunities in education, health services, and employment.

## **Defining Youth in the Context of Development**

Instead of youth and development, this paper begins with a discussion of youth development because while the former taxes youth to contribute to national development, the latter speaks of what the society is doing to position and prepare youth for future leadership. Definitions of youth development typically characterize it as a process or approach in which young people become competent or develop competencies necessary to be successful and meet future challenges (Center for Youth Development and Policy Research, 1996; Pittman & Cahill, 1991). Most definitions also identify either specific desired outcomes that young people need to achieve or critical tasks they must accomplish in order to achieve these positive outcomes (Astroth, Brown, Poor & Timm, 2002; US Department of Health and Human Services, 1996; Center for Youth Development and Policy Research, 1996; Carnegie Council on Adolescent Development, 1989). The Search Institute's definition differs slightly in its focus on assets, or factors – both internal and external – that promote positive development. In each instance, these competencies, outcomes or assets encompass a wide range of developmental areas including cognitive, social, civic, cultural, spiritual, vocational, physical, emotional, mental, personal, moral and intellectual development. Based on its research of existing definitions, the following working definition of youth development was adapted for the National Collaboration for Youth: it is a process which prepares young people to meet the challenges of adolescence and adulthood through a coordinated progressive series of activities and experiences which help them to become socially, morally, emotionally, physically and cognitively competent. This type of positive youth development addresses the broader developmental needs of youth, in contrast to deficit-based models that focus solely on the problems of youth.

## **METHODOLOGY**

Analyzing and interpreting both qualitative and quantitative data is the process of systematically organizing the materials collected, bringing meaning to them so that they tell a coherent story and writing it up so that others can read what one has learned (Ololube, 2006). In methodology literature, there is no right or most appropriate way of analyzing qualitative or quantitative data. Analysis implies and indeed requires a principled choice (Coffey & Atkinson, 1996). Based on this premise, this study employed qualitative techniques to allow the greatest degree of meaning to be given to the study. In qualitative analysis, the data is usually gathered using less structured research instruments and the findings are more in-depth since they tend to be derived from more open-ended questions. This approach to research is both more intensive and more flexible as it gives the researcher more freedom or latitude to probe areas that are of particular interest.

Qualitative research often relies on participant observation and in-depth interviews to enter the world of the subjects, systematically record what they see and hear, and then analyze what has been gathered and supplement it with other materials, such as school memoranda, records, school journals, photographs and other articles. Qualitative research is defined as an inquiry process of understanding a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting (Creswell 1994, 1998).

It is important to note that in this passage Creswell emphasizes a “complex holistic picture”, a reference to the narrative that takes the reader into the multiple dimensions of a problem or issue and displays it in all of its complexity.

The materials used in this study were largely adopted from works of known scholars in the area of youth empowerment and development, and were then adapted to the specific circumstances of Nigerian youth. In terms of the reliability of the materials used, since the methods employed by the study were qualitative no quantitative research instruments which would require reliability verification were used. The research materials and the approach used can be considered reliable to the extent that they are analytically consistent with various youth development programmes and agendas in Nigeria and other similar settings.

### **Empowering Youth for National Development**

Over time, a number of strategies and practices have been found to shape the development of young people in positive ways. While the amount of high quality research on the outcomes of these youth programmes is limited, some valuable information about the impact of youth development and leadership programmes can still be gleaned. For example, the Search Institute, an independent, non-profit organization dedicated to advancing the well being of adolescents and children by generating knowledge and promoting its application, has conducted extensive research on how young people are affected by the presence or absence of the forty developmental assets they have identified as essential to youth development. They surveyed more than 350,000 school children in more than 600 US communities between 1990 and 1995 to learn about which developmental assets they encountered, the risks they took, the deficits they had to overcome, and the ways they thrived (Search Institute 1994). Their research confirmed that the presence of the developmental assets both promotes positive behaviours and protects against negative behaviours (Benson, Leffert, Scales & Blyth 1998).

A study by Scales and Leffert (1999) found that the following outcomes were associated with the participation of young people in development settings:

- a. Increased self esteem, increased popularity, increased sense of personal control, and enhanced identity development.
- b. Better development of such life skills as leadership and speaking in public, decision-making and increased dependability and job responsibility.
- c. Greater communications in the family.
- d. Fewer psycho-social problems, such as loneliness, shyness and hopelessness.
- e. Decreased involvement in risky behaviours such as drug use and decreased juvenile delinquency.
- f. Increased academic achievement and
- g. Increased safety (youth feel safe at home, in school and in the neighbourhood).

Likewise, in their review of findings from experimental evaluations, the National Research Council and Institute of Medicine found that participation in community programmes for youth was associated with increases in positive outcomes such as motivation, academic performance, self esteem, problem-solving abilities, positive health decisions, and interpersonal skills, as well as decreases in negative behaviours such as alcohol and tobacco use and violence. While they could not determine from the studies precisely which programme features were responsible for effectiveness, they did find that many of the programmes demonstrating positive outcomes included a number of features identified in one of the Institute’s previous studies. Through an extensive review of developmental science research, in 2002 the National

Research Council and Institute of Medicine (2002) identified eight programme features known to promote positive youth development. In turn, they recommend the incorporation of the following features when designing and planning programmes for youths:

- a. Physical and psychological safety;
- b. Appropriate structure;
- c. Supportive relationships;
- d. Opportunities to belong;
- e. Positive social norms;
- f. Support for efficacy and mattering;
- g. Opportunities for skill building; and
- h. Integration of family, school and community efforts.

Gambone, Klem and Connell (2002) identified a similar set of supports and opportunities as contributing to the healthy development of young people. Child Trends, another non-profit research organization, has compiled an online index of research that demonstrates that youth development programmes are yielding positive outcomes. The index called What Works: Research Tools to Improve Youth Development (available online at <http://www.childtrends.org/youthdevelopmentintro.asp>), summarizes available research and evaluations, and categorizes them according to what works, what does not work, and what are some best bets for designing, administering and funding services for young people (Child Trends, 2004). Research briefs and reports are available on a wide range of youth development outcomes from sexual health to academic achievement to social skills. For example, one study cited in the Child Trends index found that youth who participated in a youth development programme that provided training in stress management, self-esteem enhancement, problem-solving, health, assertiveness, and the use of social support networks reported better coping, stress management, problem-solving, and conflict resolution skills than youth who were not in the programme (Caplan, Weissberg, Goyer, Sivo, Gardy & Jacoby, 1992).

In a 2001 study, Boyd looked at the impact of teen leadership programme in Fort Worth, Texas that engaged youth in weekly sessions on different concepts related to leadership followed by the experiential learning activities. Throughout the course of the programme, youth applied their newly acquired skills and concepts while completing service projects in the community. Boyd notes that experiential learning occurs “when a person is involved in an activity, looks back at it critically, determines what was useful or important to remember, and uses this information to perform another activity” (Boyd, 2001). He found that the combination of experiential learning and service significantly increased youth participants’ knowledge or leadership skills, including decision-making, goal setting, working with others, and community service.

Lastly, Sipe, Ma, and Gambone (1998) studied the level of self-efficacy among youth in three communities who participated in three forms of youth leadership activities. These activities involved either:

- a. Formal roles, includes being a team captain or coach of a team or serving as a group club officer or leader.
- b. Informal roles, include helping to plan activities, setting rules or procedures for a group, and being in charge of equipment and supplies; or
- c. Representation such as fundraising and making a presentation on behalf of a group.

They found that the youth who participated in the highest number of leadership activities also reported the highest level of self-efficacy and the youth with no leadership activities reported the lowest level of self-efficacy.

### **Preparing Youth for Future Challenges**

Effective youth leadership programmes that build on solid youth development principles are the key to advancing the role of young people in national development (Edelman et al., 2004). The inclusion of leadership development activities as one of the required programme elements is consistent with research (National Research Council and Institute of Medicine, 2002; Gambone, Klem & Connell, 2002; Sipe, Ma, & Gambone, 1998) that posits successful youth initiatives as those that give young people opportunities to take on new roles and responsibilities through the programme and in the community. Consequently, a comprehensive youth development program should emphasize a systematic and consolidated approach geared toward long-term work force preparation and consist of ten central programme elements:

- Tutoring, study skills training and instruction leading to completion of secondary school, including drop-out prevention strategies;
- Alternative secondary school services, as appropriate;

- Employment opportunities that are directly linked to academic and occupational learning;
- Paid and unpaid work experiences, including internships and job shadowing, as appropriate;
- Occupational skills training, as appropriate;
- Leadership development opportunities, which may include community service and peer-centred activities encouraging responsibility and other positive social behaviours during non-school hours;
- Supportive services;
- Adult mentoring for the period of participation and a subsequent period, for a total of not less than twelve months;
- Comprehensive guidance and counselling which may include drug and alcohol abuse counselling and referral, as appropriate.

In a review of current definitions and research, a number of common competencies and outcomes emerged. The Forum for Youth Investment Model has categorized these common competencies and outcomes into five developmental areas. These five developmental areas are working, learning, thriving, connecting and leading (Ferber, Pittman, & Marshall, 2002).

**Working:** positive attitudes, skills and behaviours around vocational direction characterize the area of development known as working (Ferber, Pittman & Marshall, 2001). Young people should be actively involved in activities that will expose them to and offer the opportunity to practice not only the actual skills needed for a particular career, but also the work readiness skills needed to find and maintain employment.

**Learning:** Positive attitudes, skills and behaviours around basic applied academic activities characterize the area of development known as learning (Ferber, Pittman & Marshall, 2002). Often, this is as simple as giving young people the opportunity to use the skills they have acquired in school or other training programmes in a different context. Youth should be encouraged to develop not only a higher aptitude for academic achievement, but also the ability to approach learning with a strategy for achieving success.

**Thriving:** attitudes, skills, and behaviours geared towards maintaining optimal physical and emotional wellbeing, characterize this area of development (Ferber, Pittman & Marshall, 2002). Not only must a young person have intellectual and social competencies so as to achieve success in adulthood, but he or she must also have the wherewithal to maintain his or her physical and emotional health. While this includes having the knowledge and capacity to identify environments and situations that could potentially compromise one's physical health, the core of this area of development is the ability to identify and access those situations and resources that can enhance one's physical and emotional wellbeing, as determined by each youth's particular circumstances and range of abilities. Of the five areas of development, thriving may require the most individualized attention for youth to achieve successful outcomes. Since each youth brings experiences to the programme, his or her reactions to situational factors will vary. In addition, each youth will have different physical and emotional abilities, as well as ways in which they access supports and services to meet their specific needs.

**Connecting:** refers to the development of positive social behaviours, skills, and attitudes (Ferber, Pittman & Marshall, 2002). Relationships with elders, peers, supervisors, family, and other community members commonly influence the ability and inclination to connect with others. The level to which a young person has developed in this area will also dictate how he or she continues to build relationships later in life. Maintaining these relationships in a way that will positively benefit the young person is also a goal of this area of development. Outcomes for this area depend on the party with whom the youth is connecting. This area of development is arguably more subjective than the other four and a youth's outcome level can be based on the number and character of relationships with peers and adults, the skills used to start and maintain these relationships, and the degree to which the youth feels acceptance and belonging toward the individual or group. For instance, if a youth feels that he or she has an extremely supportive relationship with an adult mentor, but still has very few positive peer relationships, he or she needs to be directed to programming that builds interpersonal skills with peers. Connecting is an important area of development for youth leadership and so youth leadership programmes should address and seek to build interpersonal skills.

**Leading:** this final area of development centres on positive skills, attitudes, and behaviours around civic involvement and personal goal setting (Ferber, Pittman & Marshall, 2002). Youth who are civically engaged in a positive manner, willing to participate in public activities, and able to navigate the civic arena are more likely to accept their civic responsibilities as adults. In this case, the term "civic" can refer to an entire city, a neighbourhood, a community or anything else that implies public environs.

A youth who develops the inner strength and vision to set and meet goals will benefit not only himself or herself but also his or her workplace as well as society as a whole. It is important to note that a young person is capable of showing leadership even without a "fellowship". Showing responsibility for oneself and demonstrating the ability to make personal change is often as critical as leading a group. Businesses, community-based organizations, healthcare institutions, schools, government foundations and individuals are all responsible for providing youth development

opportunities and supports if youth development is to become a viable support system for youth rather than just a fragmented collection of targeted programmes.

Although programme activities may vary with each programme and organizational focus, the areas of development and outcomes should remain constant. In other words, within each of the five areas of development listed above, there are specific outcomes that should be achieved. Youth leadership programmes typically concentrate on outcomes in the leading and connecting areas of development.

In attempting to analyze the cost of youth development, we have chosen to focus on the time period for which a vacuum exists in terms of support for youth: the hours of a typical youth's day, week and year when families and schools, in particular, are often unable to address youth needs. There is a link between how young people spend their unstructured time and youth engagement in risky behaviours. Newman et al (nd) have demonstrated that giving youth supports and opportunities like those discussed above in turn encourages youth to make positive decisions about how to fill this vacant time.

We thus begin by dividing the hours in the year of a typical youth into segments that include: sleeping, productive (school, studying and jobs), maintenance (household chores, work and errands, personal care and eating), discretionary (reading, visiting, church, television, playing, hobbies, art and activities, and sports and outdoor activities) and miscellaneous. According to these calculations, outside of time spent in school and with family, there are approximately 1,920 hours not accounted for each year; hours in which youth are looking for something to do. These hours are the focus of this study. How much would it cost to provide 1,920 hours of youth development opportunities and support to 52 million school-age youth (youth ages 6 to 17 years old) in Nigeria? While we do not have a definitive answer, we do hope to provide some of the basic parameters that must be addressed in planning such an endeavour.

## **Sustainability**

Youth development is an investment that must be made by each sector, both public and private, of the wider community. In determining each sector's level of responsibility, we must give precedence to mechanisms that account for interrelated roles as well as for programme sustainability, which requires long-term secure and adequate funding. It is imperative to secure adequate funds for youth development for at least 15 to 20 years before society can expect to see widespread positive results.

## **Building on the After-School Momentum**

Increased public attention to and investment in quality after-school opportunities for school-age youth are encouraging signs that the public is recognizing the value of youth development. There must be support and funds for after-school programmes at all levels - federal, state, local and philanthropic. A positive momentum in this regard will provide the necessary vehicle for increasing the public understanding of and commitment to youth development on a national scale. Beyond these traditional "after-school" hours, youth also need development supports and opportunities that encompass evenings, weekends, summers, and other school vacations.

## **Federal, State and Local Governments**

Given the ultimate capacity of government funding to address the developmental needs of youth, the roles of each level of government must be critically examined. While the fixed nature of dedicated funding can act as a safety measure for ensuring a minimum level of funding, this can also eventually become a barrier to increased or new funding. Dedicated taxes are a start; a bridge to getting protected and secure funding for youth development. Government can also require communities to provide new types of information about how resources are allocated to serve young people in a community. The creation of the Youth Affairs Ministry and programmes like The Adolescent Programme (TAP), and the various skill acquisition programmes of the Rivers State Government are example of government programmes that are indeed restoring the fortunes and potential of youth.

## **Business and Philanthropic Sectors**

Recent economic prosperity highlights a greater potential capacity for the business and philanthropic sectors to contribute to investments in youth development. Encouraging them to do so will entail clarifying their level of responsibility to youth and devising effective mechanisms for investments. Analogous to the federal/state match, government at all levels can provide incentives to the business and philanthropic communities to provide funding and support for youth development

programmes. The government can offer financial incentives, similar to tax abatement and tax credits given for commercial development, to these communities when they provide youth development supports and opportunities.

## **Youth with Disabilities**

Although research shows that youth who participate in youth development and youth leadership experiences are more likely to do well in school, be involved in their community and positively transition through adolescence to adulthood, youth with disabilities are often isolated from mainstream youth development programmes. To ensure equal access to the benefits of youth-focused provisions, a number of organizations devoted to promoting opportunities for persons with disabilities have become active in the arena of comprehensive youth development and work force development. Areas of need specific to youth with disabilities include exposure to mentors and models with and without disabilities, and fostering an understanding of disability history, culture, and public policy issues as well as notions of rights and responsibilities.

Self-advocacy and self-determination skill building have been found to be important components of leadership development for youth with disabilities (Agran, 1997; Sands & Wehmeyer, 1996; Van Reusen, Bos, Schumaker & Deshier, 1994; Wehmeyer, Agran & Hughes, 1998). These skills are particularly important for young people with disabilities so as to enable them to advocate on their own behalf for adult services and basic civil and legal right and protections (Sand & Wehmeyer, 1996; Wehmeyer, Agran & Hughes, 1998), and work force and educational accommodations. Wehmeyer and Schwartz (1997) found that students with disabilities who have self-determination skills are more likely to be successful in making the transition to adulthood, including securing employment and community independence, and have increased positive educational outcomes compared to students with disabilities who lack these skills.

## **New Types of Information**

There is a saying in the human services field that “you collect information about what you fund and fund what you know”. The most readily accessible information on youth consistently pertains to what is wrong with them or what they have done wrong. It is relatively easy to find out how many teenagers are parents, how many do drugs, how many dropped out of school and how many have committed a crime. On the other hand, how does one determine how many youths are abstaining from sex or practicing safe sex, how many have positive and caring relationships, how many are engaged in community services and how many are leaders in their community? How would you find out how many youth development-orientated after-school and out-of-school programmes are in a community, city, country or state or what percentage of tax or charity donations go toward the positive development of young people? We must seek new types of information that enable us to support ongoing healthy development of all youth and do not restrict us to fixing specific problem behaviours.

## **CONCLUSION**

There is much promise in the emergence of common definitions and programme components across the fields of youth development, workforce development, and development programmes for youth with disabilities. An ever-growing body of research has validated the effectiveness of quality youth development and youth leadership programmes. In order to meet present challenges, stakeholders at all levels of workforce development, youth development, and disability development must be involved. The policies suggested in this paper would cross sectors of government and fields of service delivery including employment and training, health and human services, housing and community development, secondary and post secondary education, and juvenile justice, and would not only provide services to youth but would also value youth as a resource for programme development. Such a comprehensive youth policy would put in place coherent and long-term strategies that would contribute to positive youth development in such a way that no one agency could do it on its own.

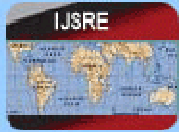
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## School Climate and Academic Performance in High and Low Achieving Schools: Nandi Central District, Kenya

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### Abstract

This study sought to find out the type of school climates prevailing in all the provincial secondary schools and the school climate differences between the high and low performing provincial secondary schools in Nandi-Central District, Kenya. Causal-comparative research design was used where the mean ratings on school climate of 103 teachers of four high and four low performing schools were compared and analysed to establish the extent of differences and their implications. High performing schools recorded a more favourable ecology, milieu, and school culture than the low performing schools. School climate was found to have a significant influence on academic performance of students in provincial secondary schools in Nandi-central district. The study recommended that schools strive to improve the schools' ecology, milieu, social climate and school culture, thereby creating a positive climate that will encourage better academic performance among students.

**Keywords:** School, climate, milieu, culture, ecology, academic performance, Kenya

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## INTRODUCTION

School climate is a significant element in improving academic performance especially in Nandi-Central district which has for a long time relied on a few outlier schools that have consistently performed well while the rest continue to perform dismally in national examinations. Provincial secondary schools in Nandi–Central district admit approximately 1,200 students every year to join Form 1 with an average entry marks of 370 out of a possible 500 obtained at Kenya Certificate of Primary Education. At the end of four years of secondary education, only four out of eight provincial secondary schools obtain a mean score of 7.0, a grade of C+ and above. Majority of the students in the other four provincial secondary schools obtain a grade of below C plain (mean score of 6.9) Interplay of favorable school climate factors appears to influence performance in national examinations in those schools that perform better (Ministry of Education, 2004-2009).

School climate is an integral and indispensable component of the teaching and learning process in Kenya and the world at large. Indeed, no meaningful teaching and learning can take place in an environment that is conducive and safe to both learners and staff. It is, therefore, imperative that educational stakeholders foster safe and secure school environments to facilitate increased learner enrolment, retention and completion and hence attainment and quality education. (UNESCO, 2006)

Schools perceived as being positive, safe, and nurturing environments focused on student learning, perform better in examinations regardless of available technology or teacher training. This is not to say that a school with no textbooks will outperform one with textbooks based solely on environment, but that the learning environment, culture, and climate produced by the school as a whole may help or hinder learning.

The quality of education tends to be evaluated in terms of the number of students passing national examinations (Eshiwani, 1993). The expectation of parents is that their children perform well in national examinations in any provincial secondary school attended as long as the criterion for admission to these schools is the same. This is not however the case as the perception among many parents is that some schools, although they are the same in category, seemingly perform better than others. This has resulted in many parents rushing to secure admission in these better performing schools while the rest, with equally better resources and facilities, continue to record low enrolment, let alone the poor performance in national examinations.

Constant attention must, therefore, be paid by all stakeholders in education towards the creation and continuation of a school climate that is warm, welcoming, supportive, and conducive to the learner. Such a school climate exists when all students feel comfortable, wanted, valued, accepted and secure in an environment where they can interact with caring and trusting people. This study therefore was set to examine the types of school climates prevailing in both high and low performing provincial secondary schools in Nandi-Central district with the aim of establishing whether these school climates were significant in influencing students' academic achievement.

No school is exactly the same as the other. Schools show a lot of differences in terms of the feel, atmosphere or ideology, student behavior, academic performance, social and civic values, moral character, and interpersonal skills. The cumulative effect of these differences creates the 'ethos' or climate of the school. Many studies have been conducted linking a positive school climate to student performance (Bliss, Firestone, & Richards, 1991; Carter, 2000; Cruickshank, 1990; DuFour, 2000; Goddard, Tschannen – Moran, & Hoy 2001; Hoy & Feldman, 1987; Hoy & Hannum, 1997; Klinger, 2000; Lezotte, 1991, 1992, 2002). The overall conclusion of these studies has been that a positive school climate exists as an essential element in successful schools. Freiberg (1998) asserts, "... school climate can have a favorable influence on the health of the learning environment or a significant barrier to learning" (p. 22).

Although there is not one commonly accepted definition of school climate, the vast majority of researchers and scholars suggest that school climate, essentially, reflects subjective experiences in a school (Cohen, 2006). Pioneering works of early researchers did attempt to define school climate in a variety of ways. Perry (1908) was the first educational leader to explicitly write about how school climate affects students and the process of learning. Halpin and Croft (1963) define school climate as the social atmosphere of a setting or a "learning environment" in which students have different experiences depending upon the protocols set up by the teachers and administrators. Maine Guidelines (2004) define school climate as the synthesis of policies, procedures, activities, programs and facilities both formal and informal within a school infrastructure that affect the attitudes and behavior of all people in the school, staff, students, parents and visitors. The concept of school climate is multi-dimensional and influences many individuals including students, parents, school personnel and the community. Haynes (1998) asserts that a positive school climate perception helps to supply high risk students with a supportive learning environment as well as preventing anti-social behavior. Such a climate is associated with fewer behavioral and emotional problems for students. Although these definitions are as

varied as the schools themselves, they have one common element that school climate affects members of a school either positively or negatively.

## **CONCEPTUAL FRAMEWORK**

There are varied ways of conceptualizing organizational climate. This study was premised on Tagiuri's (1968) conceptualization of organizational climate. Although the distinction between the term school culture and climate is somewhat blurred and overlapping (Hoy and Miskel, 1996), culture consists of shared assumptions, values, or norms while climate is defined as shared perceptions of behavior (Ashforth, 1985). Halpin and Croft's (1963) pioneering work provided the impetus for research into the concept of organizational climate. They constructed the Organizational Climate Descriptive Questionnaire (OCDQ), which stimulated a lot of interest in school climate research (Anderson, 1982). Wayne et al. (1986) developed two revised versions of the OCDQ, one for elementary schools (OCDQ-RE) and the other for secondary schools (OCDQ-RS).

Tagiuri (1968) conceptualized organizational climate as consisting of ecology, milieu, social climate and school culture. Ecology refers to the physical features of the school, such as the design of buildings, age, and size, facilities and resources including the equipment and technology used in the school's operation. Milieu is defined as the characteristics of the people; their attitudes, skills, motivation, feelings, morale, values and leadership. Social climate is defined as the social interactions in the school between the teachers and students, teachers and administrators, students and administrators. It also encompasses aspects such as respect, caring, support and dependence, shared decision making, good communication, equal opportunities for student participation and community – school relations. Organizational climate clearly influences the success of an organization. Glisson and James (2002) demonstrated that culture and climate are distinct, but interrelated and can play the role of constructs.

Many organizations, however, struggle to cultivate the climate they need to succeed. Hellriegel and Slocum (2006) explain that organizations can take steps to build a more positive climate through: communication, values expectations, norms, policies and rules, programs and leadership which require a rich organizational structure, reward systems, technology, or tasks (Datnow, Hubbard, & Mehan, 2002).

## **LITERATURE REVIEW**

### **Ecology**

Tagiuri (1968) defines ecology as the physical and material elements of a school such as the design of buildings, size and age, state of décor, facilities, and technology in use. The physical and architecture of schools plays a significant role in communicating meaning in schools. Students and staff spend much of their time in a school building.

McGuffey (1982) in his studies examined the possibility of a relationship between the building conditions and student performance on standardized tests. He reported that newer building, improved lighting as well as specific features such as the presence of science laboratories and libraries improved students' outcomes significantly. In another study of school building design and student learning, Cash (1993) found that comfort factors appeared to have more effect on student achievement than did structural factors. High achievement was associated with schools that were air conditioned, enjoyed less noisy external environments, had less graffiti on walls and classroom furniture and students' lockers were in good state of repair. Rutter et al (1979) on eight high achieving schools noted that the decorations and care of schools and classrooms were positively related to higher student achievement. Other researchers have consistently found a relationship between building quality and academic out-comes (Earthman & Lemasters, 1996; Haggins, Hall, Wall, & McGuffey, 2005; Schneider, 2002).

These studies have found that the design and building conditions related to human comfort, indoor quality, lighting, acoustical control and science laboratories have demonstrable impact on student achievement. Chronic noise exposure hinders cognitive functioning and impairs pre-reading and reading skills (Haynes & Comer, 1993). The quality of school buildings is linked to student behavior including vandalism, absenteeism, suspensions, disciplinary incidences, violence and smoking (Schneider, 2002). Students are not the only ones affected by poor quality school facilities. Buckley, Schneider, and Shang (2004), in their studies, reported that teacher retention decisions were significantly related to the quality of school facilities.

## **Milieu**

Milieu focuses on the characteristics of the people in the organization such as their skills, motivation, feelings, morale, values and leadership (Owens & Valesky, 2007). Measures of school milieu based on teacher characteristics have shown little impact on outcome (Anderson, 1982). Rutter et al. (1979) found that neither mean hours of preparation nor the checking of record books was associated with any outcome.

Similarly, McDill and Rigsby (1973) found no relationship between mean annual teacher salary and neither achievement nor aspirations among high school students. However, they found a higher percentage of teachers with more than a Bachelor of Arts degree to be significantly related to both achievement and to plans. Farrant (1980) contends that the professional skill of the teacher establishes a productive classroom atmosphere from the start by means of good organization and carefully planned teaching structures. He further asserts that professional competence often transforms into high quality of teaching with the expectation that this would influence the learning of pupils. Researchers such as Goldhaber (2002), Greenwald, Hedges, and Laine (1996), Nye, Konstantopoulos, and Hedges (2004), Wenglinsky (2001), and Wilson and Floden (2003) however, found credentials such as graduate degrees to be weakly related to teacher performance, as is teaching experience beyond the first or second year of a teacher's career. Agyeman (1993) reported that a teacher who does not have both the academic and the professional teacher qualification would undoubtedly have a negative influence on the teaching and learning of his/her subject. However, he further stated that a teacher who is academically and professionally qualified, but works under unfavourable conditions of service would be less dedicated to his work and thus be less productive than a teacher who is unqualified but works under favourable conditions of service.

Agba et al (2010) argue that a teacher who is friendly and warm towards the students is more likely to stimulate learning than the one who is withdrawn and autocratic in his dealing with the students. Abang (2006) reported that teachers provide the stimulus that produces the various forms or types of relationship that exist within the classroom. He further states that these relationships influence the attitude developed by the students as well as their performances in the subject taught. A warm, friendly, sympathetic and caring teacher evokes a positive classroom perception.

## **Social Climate**

Tagiuri (1968) defines the schools' social climate as the social interactions in the school between the teachers and students, teachers and administrators, students and administrators. It also encompasses aspects such as respect, caring, support and dependence, shared decision making, good communication, equal opportunities for student participation and community – school relations.

Several researchers have delved into the aspect of the schools' social climate and the overall conclusion of these studies has been that the schools' social climate has the potential of yielding both positive educational and psychological outcomes and at the same time negative effects on both the students and the school personnel. Freiberg (1998) argues that aspects of school social climate including "...trust, respect, mutual obligation and concern for others' welfare can have powerful effects on educators and learners' interpersonal relationships as well as academic achievement and overall school progress..." (p. 44).

McEvoy and Welker (2000) posit that positive interpersonal relationships and optimal learning opportunities for students in all demographic entities can increase achievement levels and reduce maladaptive behavior. Wynne (1980) also adds that the value of good relationships and non-academic events involving both teachers and students can have immense contribution to school coherence (an aspect of school climate). In the school every student is seen as a member of a group; how a student interacts with other group members will influence his or her performance. Groups that are considered high in achievement consist of achieving-students as their interactions are bound to influence their academic achievement (Inyang-Abia 2001). Students who succeed in social relationships with their co-students have been found to be successful in their school work (Brembeeks, 1980). Duke and Perry (1978) also noted that good student- teacher relationships in alternative schools was associated with both a degree of informality and good behaviour.

Many research reviews have also shown that effective risk prevention and health promotion efforts are correlated with safe, caring, participatory, and responsive school climate (Berkowitz & Bier, 2005; Catalano et al., 2002; Greenberg et al. 2003). A safe, caring, participatory and responsive school climate tends to foster great attachment to school as well as providing the optional foundation for social, emotional and academic learning (Blum et al., 2002.)

## **School Culture**

Owens (1995) and Tagiuri (1968) define school culture as the values, beliefs, norms and behaviour patterns of the people who are members of the school community. School culture generally refers to a set of values and belief systems of various groups within the school. It also includes assumptions, norms, history, heroes, myths, rituals, artefacts, visible and audible behavior patterns. Deal and Peterson (1990) describe school culture as the unwritten rules, traditions, norms and expectations that seem to permeate everything: the way people act, how they dress, what they talk about or avoid talking about, their work, and their students. Schein (1985) also defines school culture as complex webs of traditions and rituals that have been built over time as teachers, students, parents, and administrators work together and deal with crises and accomplishments. Culture is based on past experience, which provides a template for future action. Fiore (2004) adds that culture is the supporting structure on which the school climate rests.

Components of a school culture can support or impede learning thereby affecting academic performance of students either positively or negatively. Many researchers have considered teacher commitment to improve students' academic performance as a significant variable in climate. Brookover et al. (1979) found that teacher commitment appeared to be a function of student perception that teachers care. Brookover and Lezotte (1979) found the same high relationship between teacher commitment and student success. Schein (1985) also adds that commitment grows in strong caring cultures. Studies by Miller (1968) and Maxwell (1967) found a negative correlation between teacher disengagement (the tendency of teachers to be uninvolved) with student achievement in elementary schools. Where teachers are committed, their students tend to perform better.

## **METHODOLOGY**

### **Study Design**

Causal comparative research design (*ex post facto*) was used in this study where an attempt was made to identify the cause-effect relationship between school climates of high and low performing provincial secondary schools in Nandi-Central district of Kenya and academic achievement of students at Kenya Certificate of Secondary Examination (K.C.S.E.). In this design, the cause-effect linkage is made logically as the research process proceeds as follows: it focuses on the effect and then asks what might be causing that effect, and lastly, attempts to identify and substantiate a plausible connection between the effect and its cause (Gay, 1996). The design requires an identification of a criterion group, which is composed of people who have been observed, judged, or who describe themselves as possessing a certain characteristic that differentiates them from others, and examination of the possible causes for these differences. Kafui (2005) posits that causal-comparative studies are important in education because several educational variables cannot be manipulated and be used for experimental research. Descriptive research analysis was also employed in this study. Fraenkel and Wallen (1993) posit that descriptive analysis involves asking a large group of people questions about a particular issue and drawing conclusions.

In this study, negative and positive school climate were presumed to have already occurred and, therefore, data was collected and analysed retrospectively to establish their relationships or associations and meanings in relation to academic performance of students at the K.C.S.E. level.

### **Sample Size and Sampling Techniques**

Purposive sampling technique was used to identify both the high and low performing schools based on the KCSE examination results of the selected schools. Out of the eight provincial secondary schools; four were reported to be high performers while the other four were poor performers in national examinations for the last five years. The high performing schools in this study were those whose examination mean scores recorded over the last five years to be above 7.0 with a mean grade of C+ and above, while the low performing schools were those whose mean scores were 6.9 and below, with a mean grade of less than C plain in the same period.

The schools selected were of the same category in the sense that they are all provincial secondary schools. Cluster sampling technique was used to involve all. The sample in this study comprised of 103 teachers in four provincial boys' secondary schools, three girls' secondary schools, and one mixed gender secondary school.

### **Research Instruments**

A questionnaire was used in this study. The questionnaire was modelled on the four-point scale numbered 4, 3, 2 and 1. The points represented the following responses: 4 - Agree, 3 - Tend to Agree, 2 - Tend to Disagree and 1 - Disagree.

These points represented the extent of agreement or disagreement by the respondent on the statements that were listed in the questionnaire. The respondent was asked to tick in the box that provided the point that corresponded with the description that best suited his or her view. These tools sought information to rate their schools on each of the items regarding to their perception of school climate prevailing in their respective schools.

### Development of the Research Instruments

The researchers designed a questionnaire intended for use in this study. The statements that characterize each dimension of school climate were patterned after the instrument that Halpin and Croft (1963) constructed called the Organizational Climate Descriptive Questionnaire (OCDQ). It contained sixty-four Likert-type items that were assigned to eight subtests delineated to factor-analytic methods. Four subtests dealt with the characteristics of the group and the other four dealt with the characteristics of the principal as a leader. From the scores of these eight subtests, they then constructed for each school a profile, which determined the relative position of the school on the open to closed intensity scale.

Halpin’s and Croft’s (1963) pioneering work concentrated mainly on the principal behaviour, but in this study the scope was widened to include teacher and student behavior in determining school climate. The questionnaire was slightly modified to incorporate not only the perception of the teachers on the principals’ , behavior but also their perceptions on their school climate as well as their role in shaping school climate at being team players with the principal.

The questionnaire contained 46 items. It was divided into five sections: section A, dealt with demographic profile of the respondents; section B, ecology; section C, milieu; section D, social climate; and section E, school culture dimensions of the school climate. The teachers were asked five additional questions that dealt on specific matters that affected them in their teaching.

### Reliability of the Instrument

To test reliability, a pilot study was conducted in three provincial secondary schools; one girls’ secondary school, and two boys’ secondary schools in the neighbouring Nandi-North district. A reliability analysis was done to test whether each item stated in the questionnaire yielded the desired and consistent outcome (Gay, Mills and Airasian, 2006).

Cronbach’s Alpha coefficient was obtained to estimate the internal consistency of items. A reliability coefficient of greater than 0.635 for both students and teachers in each dimension of school was obtained as shown in table 2.

Table 1: *Reliability Coefficients*

		Cronbach’s Alpha	No of items
Teachers	Ecology	.743	10
	Milieu	.724	8
	Social climate	.916	17
	School culture	.849	10

The results of the pilot study were used to test the reliability of the questionnaire in order to establish the extent to which it was able to elicit the desired information. The instrument was reliable as the coefficient of reliability was found to be greater than 0.60 in all the sub-scales that were being studied namely: ecology, milieu, social climate, and school culture. A coefficient of reliability of .60 was considered good enough in this study.

### Data-Gathering Procedures

During the pilot study, the researchers administered the research instrument to three leading provincial secondary schools in the neighbouring Nandi –North district. Two of these schools were Boys’ schools and one Girls’ school. In the actual study, all the eight provincial secondary schools in Nandi-central district participated in the study: three Girls’ schools, four Boys’ schools and one mixed gender secondary school.

The questionnaires were distributed to all the teachers who were available in the staffroom at the time of the study. Every teacher who was at the staffroom was given a questionnaire. Not all the teachers were present in the staffroom at the time of the study since classes were in progress. However, a sufficient number of respondents were obtained for the study.



## Statistical Treatment of Data

The data collected was encoded and analyzed using Statistical Package for Social Sciences (SPSS). Descriptive and inferential statistics were employed. Descriptive statistics delved mainly on describing the demographic profiles of the respondents and their perceptions of school climates prevalent in the provincial secondary schools in Nandi-Central district.

Comparisons of school climates of both high and low performing secondary schools in Nandi- Central district were made to establish the influence of school climate on academic achievement. *T-test*, a parametric statistical tool, was used to compare mean differences of the perceptions of teachers on all aspects of school climate under study in both the high and low performing schools. A *t-test* was used to determine whether two means were significantly different at selected probability levels (Gay, Mills, & Airasian, 2006). The level of significance was set at 0.05 in this study.

## RESULTS AND DISCUSSION

This study examined if there was a significant difference between the school climate of high and low performing provincial secondary schools in Nandi-Central District as perceived by teachers and measured by the following components:

- a) Ecology
- b) Milieu
- c) Social climate
- d) School culture

The null hypothesis: *there is no significant difference between the school climate, measured by ecology, milieu, social climate, and school culture, of high and low performing provincial secondary schools in Nandi-Central district as perceived by the students and teachers* was tested in this section.

### Ecology

Table 2 shows test of differences on teachers' ratings on ecology between high and low performing schools.

Table 2: *Test of Differences on Ecology between High and Low Performing*

Performance category		N	Mean	Std. Deviation.	Std. Error mean					
Ecology	High performing schools	59	3.1541	.40065	.05216					
	Low performing schools	44	2.7438	.62502	.09423					
Independent samples test										
		Levene's Test for Equality of variances			95% confidence interval of the difference					
		t-test for equality of means								
		F	Sig.	t	df	Sig.(2-tailed)	Mean difference	Std. Error difference	Lower	upper
Ecology	Equal variances assumed	12.554	.001	4.051	101	.000	.41028	.10127	.20938	.61118
	Equal variances not assumed			3.810	68.614	.000	.41028	.10770	.19541	.62516

### Milieu

Table 3 shows the test of differences on the teachers' ratings on milieu between high and low performing schools.

Table 3: *Test of differences on milieu between high and low performing schools*

Performance category		N	Mean	Std. deviation	Std. Error mean
Milieu	High performing schools	59	3.0572	.67287	.08760
	Low performing schools	44	2.4489	.63756	.09612

Independent samples test			Levene's Test for Equality of variances						t-test for equality of means				95% confidence interval of the difference	
			F	Sig.	t	df	Sig.(2-tailed)	Mean difference	Std. difference	Error	Lower	upper		
Milieu	Equal variances assumed		.488	.486	4.641	101	.000	.60834	.13108		.34831	.86837		
	Equal variances not assumed				4.678	95.337	.000	.60834	.13005		.35018	.86650		

## Social climate

Table 4 shows test of differences on teachers' ratings of social climate between high and low performing schools.

Table 4: *Test of Differences on Social Climate between High and Low Performing Schools*

		Performance category	N	Mean	Std. Deviation	Std. Error mean
Social climate	High performing schools		59	3.0578	.63754	.08300
	Low performing schools		44	2.6778	.67672	.10202

Independent samples test			Levene's Test for Equality of variances						t-test for equality of means				95% confidence interval of the difference	
			F	Sig.	t	df	Sig.(2-tailed)	Mean difference	Std. difference	Error	Lower	upper		
Social climate	Equal variances assumed		.004	.952	2.915	101	.004	.38002	.13037		.12140	.63864		
	Equal variances not assumed				2.869	89.645	.004	.38002	.13152		.11872	.64132		

## School culture

The test statistic obtained was 6.212 with a *p*-value of .000 which was less than 0.05, indicating that there was a significant difference between the school culture in high and low performing provincial secondary schools in Nandi-central district as perceived by teachers. Teachers in high performing schools recorded a positive school culture with average rating of 3.3881 compared to their counterparts in the low performing schools who recorded a mean of 2.6409. Table 5 shows test of differences on the teachers' rating of social climate between high and low performing schools.

Table 5: *Test of Differences on School Culture Between High and Low Performing*

		Performance category	N	Mean	Std. deviation	Std. Error mean
School culture	High performing schools		59	3.3881	.54046	.07036
	Low performing schools		44	2.6409	.68005	.10252

Independent samples test			Levene's Test for Equality of variances						t-test for equality of means				95% confidence interval of the difference	
			F	Sig.	t	Df	Sig.(2-tailed)	Mean difference	Std. difference	Error	Lower	upper		
culture	Equal variances assumed		2.108	.150	6.212	101	.000	.74723	.12028		.50862	.98583		
	Equal variances not assumed				6.009	79.905	.000	.74723	.12434		.49977	.99468		

Ruther et al (1979) and Wynne (1980) found that schools that recognize students' accomplishments tend to have higher levels of achievement. School culture is a significant factor that influences academic performance either positively or negatively. A positive school culture results in better academic performance of students as opposed to a negative school culture. A negative school culture seems to permeate the low performing provincial secondary schools in Nandi-central district. This might explain their persistent low performance in national examinations. Rosenthal and Jacobson (1968) in their research sum up by reporting that a high achieving school is one in which the staff manifests attitudes of confidence that students will be able to succeed academically.

The null hypothesis was rejected since there was a significant difference between school climate in high and low performing provincial secondary schools in Nandi- Central district as measured by ecology, milieu, and culture as perceived by the teachers.

## CONCLUSIONS AND RECOMMENDATIONS

Provincial secondary schools in Nandi–Central district have a generally favourable ecology, milieu, social climate and school culture as rated by teachers. However, much can be achieved if school leaders interested in incorporating school climate policy into practice create guidelines for in-service professional development based on school climate research and practice.

There is need to support the purpose of education in a society and demonstrate how we can use evaluating and improving school climate as a springboard to develop the skills, knowledge and dispositions that provide the foundation for active citizenship and school climate improvement. Standards for schools climate assessment procedures and guidelines for selecting a school climate measure should be put in place.

Policy makers must become aware of school climate research and the importance of positive school climate and encourage teacher preparation programs that give teachers and administrators the tools to evaluate classroom and school climate and take steps to use these findings to promote a climate for learning in schools.

A sustainable, positive school climate fosters youth development and learning necessary for a productive, contributing and satisfying life in the society. In other words, when students, in partnership with educators and parents, work to improve school climate they promote essential learning skills (e.g. creativity and innovation skills, critical thinking and problem solving skills, communication and collaborative skills) as well as life and career skills (e.g. flexibility and adaptability, initiative, social and cross culture skills, productivity and accountability, leadership and responsibility) that provide the foundation for 21st century learning.

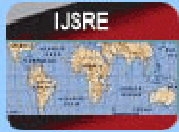
Further studies could look at how program developers, university researchers, and local educational agencies can directly conduct carefully constructed studies to create and support teacher professional development programs that encourage the development of teacher professional communities within schools and ascertain their impact on improving school culture and student achievement.

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**Appraising the Performance of Secondary School Students on the WAEC and NECO SSCE from 2004 to 2006**

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**Abstract**

This investigation examines the performance of secondary school students on WAEC and NECO SSCEs from 2004 to 2006. The researchers, having reason to doubt the parallel nature of the examinations conducted by WAEC and NECO, undertook a quantitative analysis of the performances of candidates in the SSCE in select subjects – Mathematics, English Language, Chemistry, Physics, Biology, Literature-in-English, Economics, Government, Agricultural Science, Food and Nutrition, and Geography, so as to establish their comparability. The research design was correlational. A sample of 1,233 participants was drawn from a population of 1,422,140 examination candidates using a purposive sampling technique. The instruments for data collection included the WAEC and NECO SSCE Result Forms. Eleven hypotheses were tested with the Pearson correlation technique set at 0.05 alpha level. Findings indicate a statistically significant positive relationship between candidates' performance on WAEC and NECO SSCEs in all the subjects.

**Keywords:** Evaluation, Performance, Students, WAEC, NECO, SSCE, Examinations, Nigeria

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## INTRODUCTION

Education is the most veritable of instruments for social and political mobilization and the acquisition of important technical skills (Ololube, 2011a,b). For these reasons, a substantial share of the nation's resources is invested in education. The performance of candidates on their graduating examinations after these investments has long been a matter of concern to many well-meaning individuals, institutions and organizations as well as to various levels of government. Performance in each subject of these examinations has implications for the overall result of excellent, good, fair or poor given to a student. Student academic performance on SSCEs constitutes the focus of this study.

The broad aims of secondary school education in Nigeria, as stated in the National Policy of Education (FME, 1982), are to prepare the individual child for (i) useful living in the society; and (ii) for higher education. In reality these aims are very often defeated as most secondary school graduates fail to adapt adequately to society and fail to succeed in post-secondary education, despite their possession of excellent or good certificates. For some time now, there has been increasingly vocal and widespread criticism of the examination system in Nigeria. School certificate examinations, which determine the placement of Nigerian students in higher learning and/or employment, are of particular concern. Post-secondary education institutions are overtly dissatisfied with the incompetence of many entrants who have gained admission into courses that they are not prepared for. The public likewise disparages the falling or fallen standard of education as evidenced by the lack of skills and personal integrity of many school leavers (Udor & Ubahakwe, 1979; Ololube, 2008b). Not surprisingly, the evaluation agencies that conduct the examinations are held liable by both universities/colleges and the public for education's diminishing returns.

Evaluation is the passing of decision or judgment on a particular trait in accordance with a test which validly and reliably measures the presence of that trait (Kpolovie, 2002, Ololube, 2008a). Evaluation involves both quantitative and qualitative description of a pupil's behaviour, and the passing of value judgment concerning the desirability of that behaviour (Harbor-Peters, 1991). Since evaluation remains indispensable in any academic programme, teaching and instructional duty are rendered incomplete or lacking until an evaluation of the outcome of instruction has been performed. Evaluation agencies, which also act as examining bodies, are tasked with maintaining a common standard in the development and administration of public examinations.

According to Nworgu (1992), evaluation agencies were set up to promote education, to co-ordinate educational programmes, and to control and monitor the quality of education in educational institutions, the essence of which is the organization of public examinations so as to provide uniform standards to all test takers, irrespective of the type or method of instruction they have received. Some of these examination bodies in Nigeria include the West African Examinations Council (WAEC), the National Examination Council (NECO), the Joint Admission and Matriculation Board (JAMB), and the National Business and Technical Examination Board (NABTEB). A closer look at the operations of these boards reveals that some of them perform similar functions. WAEC, NECO and NABTEB, for instance, all conduct secondary school graduate certification, although in the case of NABTEB, the examination is reserved for graduates of Nigerian Technical and Vocational Colleges.

The assemblage of subject examinations conducted by these examining bodies is known as the Senior Secondary School Certificate Examination (SSCE) and serves as an end-of-course evaluation for all secondary school graduates. The purpose of this examination is to ascertain to what degree students in a particular course have achieved the course or educational objectives (Offor, 2001). In view of the economic and social importance attached to senior secondary school certificates, and the opportunities for higher education for those who possess such certificates, the awarding of this certificate is one of the most important events in the Nigerian academic calendar. It thus goes without saying that much is expected from certificate examining and awarding bodies in terms of ensuring that the spirit and focus of the examinations is not misplaced.

The establishment of NECO, which was seen by many as an attempt to reduce the burden on WAEC and mitigate the burden of testing large number of candidates, unfortunately led to concerns by some that credibility issues would inevitably arise (Afemikhe, 2002). With two examining bodies, WAEC and NECO, conducting parallel SSCEs, students admitted to write either version of the SSCE should be assumed to possess similar academic strengths (those needed for undergraduate activities). In the recent past, however, some calls have been made for the cancellation of NECO for fear that the SSCE it administers is not as valid as that of the WAEC (Falaye & Afolabi, 2005). Critics submit that a large portion (40%) of candidates' final outcome in each of the subject areas at the NECO Senior School Certificate Examination is made up of school-based teacher assessment scores. However, this assertion, if true, may not necessarily be detrimental to the credibility of NECO certification as the National Policy on Education has been quoted by Nworgu (1992) as stating that educational assessment and evaluation is to be liberalized by basing such evaluation in whole or part on continuous assessment of the progress of the individual.

Having been given a similar mandate, to conduct the Senior School Certificate Examination it would seem unfair if the holders of either the WAEC or NECO certificate are discriminated against. However, in the not too distant past,

some universities in Nigeria and abroad denied entrance to holders of NECO certificates based on speculations about their integrity. As a standardized test, the SSCE adheres to a uniform mode of test construction, administration, scoring and interpretation, and it should thus be expected that both WAEC and NECO test items pass through the same rigorous standardization procedures before they are administered to candidates. In this way, differences in performance should be exclusively the result of chance factors like the individuality and academic dedication of candidates.

If both WAEC and NECO are able to maintain high standards in the development and administration of Senior School Certificate Examinations, then performances in the examination should be good indicators of individuals' standings with respect to any of the tested subject areas. How often, however, is this the case? It is possible, for instance, to identify candidates who scored an F9 on the WAEC SSCE and an A1 on the NECO SSCE in the same subject and in the same year, thus leaving observers to wonder if both SSCEs are in fact parallel?

### **Statement of the Problem**

The researchers believe that the noble objectives of secondary education can only be achieved if there is an effective evaluation and assessment machinery. Consequently, this study focuses on comparing candidate performances on WAEC and NECO Senior School Certificate Examinations. This study has reason to doubt the comparability of WAEC and NECO SSCEs. One way of investigating the validity of such doubts is to determine the success of both the WAEC and NECO in maintaining the once high standards of the Senior School Certificate Examination. These standards can be assessed using one or more of the following criteria: i) coverage of course content; ii) coverage of educational objectives; iii) performance of candidates in the examination; iv) the examination as a good predictor of future performance; and v) the reliability of the test. The present study focuses on the performance of candidates in the examination.

### **Purpose of the Study**

The purpose of this study is to determine the relationship between the performance of candidates on the WAEC and NECO SSCE in Mathematics, English Language, Chemistry, Physics, Biology, Literature-in-English, Economics, Government, Agricultural Science, Food and Nutrition, and Geography from 2004 to 2006

### **Hypotheses**

To guide this study, eleven null hypotheses were tested at a 0.05 level of significance:

1. That there is no statistically significant relationship between the candidates' Mathematics performance in WAEC and NECO's SSCE from 2004-2006.
2. That there is no statistically significant relationship between the candidates' English Language performance in WAEC and NECO's SSCE from 2004-2006.
3. That there is no statistically significant relationship between the candidates' Chemistry performance in WAEC and NECO's SSCE from 2004-2006.
4. That there is no statistically significant relationship between the candidates' Physics performance in WAEC and NECO's SSCE from 2004-2006.
5. That there is no statistically significant relationship between the candidates' Biology performance in WAEC and NECO's SSCE from 2004-2006.
6. That there is no statistically significant relationship between the candidates' Literature-in English performance in WAEC and NECO's SSCE from 2004-2006.
7. That there is no statistically significant relationship between the candidates' Economics performance in WAEC and NECO's SSCE from 2004-2006.
8. That there is no statistically significant relationship between the candidates' Government performance in WAEC and NECO's SSCE from 2004-2006.
9. That there is no statistically significant relationship between the candidates' Agricultural Science performance in WAEC and NECO's SSCE from 2004-2006.
10. That there is no statistically significant relationship between the candidates' Foods and Nutrition performance in WAEC and NECO's SSCE from 2004-2006.
11. That there is no statistically significant relationship between the candidates' Geography performance in WAEC and NECO's SSCE from 2004-2006.



## METHODOLOGY

This study adopted a correlational research design to determine the relationship between the performances of candidates in WAEC and NECO examinations (Ololube, 2009). The target population consisted of candidates of the Nigerian Senior Secondary School Certificate Examination conducted by both the West African Examination Council (WAEC) and its equivalent, the National Examination Council (NECO). The total population of test candidates in Nigeria between 2004 and 2006 was 1,422,140. The researcher obtained the scores of candidates that participated in the May/June Senior School Certificate Examinations from 2004 to 2006 using a purposive sampling technique. A purposive sampling technique was adopted in this study to allow for data accessibility, the perceived importance of peculiar characteristics of the sub-groups, and the comparability of the score of examinees who took both examinations concurrently. The sample size was in observance of the minimum sample size estimate in Taro Yamen's formula. The sample size for this study was 1,233 candidates.

The instruments used in this study included WAEC and NECO Senior Secondary Certificate Examination Result Forms (WNSSCE-RF). Scores for WAEC and NECO SSCE candidates in the sample were collated and tabulated subject by subject to allow for proper analysis. Each candidate's performance on both examinations was compiled on the relevant instrument for brevity, ease of understanding and comparison. The validity and reliability of the instrument was ascertained based on its relevance as an information gathering instrument in this context and its stability in consistently measuring what it purports to measure. Resource persons who subjected the instrument to validation in terms of clarity, relevance and appropriateness, found it adequate for this study's purpose. In terms of scoring (measuring the relative performance of secondary school students on the WAEC and NECO SSCE), the highest score in both examinations, A1, was given the value 9, the second highest score B2 was given the value 8, B3 was accorded 7, C4 accorded 6, C5 accorded 5, C6 accorded 4, D7 accorded 3, E8 accorded 2, and F9 accorded 1. The null hypotheses were tested at a 0.05 level of significance using the Pearson product moment correlation technique ( $r$ ).

## RESULTS

The results of the data analysis are presented below based on the study's hypotheses.

**Hypothesis One:** There is no statistically significant relationship between the candidates' Mathematics performance in WAEC and NECO's SSCE from 2004 to 2006

Table 1: Summary of Pearson's correlation of the relationship between the candidates' Mathematics performance in WAEC and NECO's SSCE

Mathematics	N	r	Sig.
WAEC	1153	0.475	0.000
NECO			

Table 1 shows a positive relationship between candidates' Mathematics performance on the WAEC and NECO SSCE. This relationship is of 0.000 significance at the chosen alpha level of 0.05. Since the value (0.000) at which  $r$  (0.475) is significant is less than 0.05, the null hypothesis is rejected. The alternate hypothesis of a statistically significant relationship between candidates' Mathematics performance on the WAEC and NECO SSCE is accepted.

**Hypothesis Two:** There is no statistically significant relationship between the candidates' English Language performance in WAEC and NECO's SSCE from 2004 to 2006

Table 2: Summary of Pearson's correlation of the relationship between the candidates' English Language performance in WAEC and NECO's SSCE

English Language	N	r	Sig.
WAEC	1146	0.512	0.000
NECO			

Table 2 shows that the correlation coefficient (r) for candidates' English Language performance on the WAEC and NECO SSCE is 0.512. This indicates a positive relationship. The correlation coefficient is 0.000 significant at the chosen 0.05 alpha level. Since the value at which r is significant (0.000) is less than 0.05, the null hypothesis is rejected.

**Hypothesis Three:** There is no statistically significant relationship between the candidates' Chemistry performance in WAEC and NECO's SSCE from 2004 to 2006

Table 3: Summary of Pearson's correlation of the relationship between the candidates' Chemistry performance in WAEC and NECO's SSCE

Chemistry	N	r	Sig.
WAEC	703	0.293	0.000
NECO			

In Table 3, the correlation coefficient for the relationship between candidates' Chemistry performance on the WAEC and the NECO SSCE is 0.293. This indicates a positive relationship. The correlation coefficient is 0.000 significant at 0.05 alpha level. The null hypothesis is rejected and the alternate hypothesis, that of a statistically significant relationship between candidates' Chemistry performance on the WAEC and NECO SSCE, is accepted.

**Hypothesis Four:** There is no statistically significant relationship between the candidates' Physics performance in WAEC and NECO's SSCE from 2004 to 2006

Table 4: Summary of Pearson's correlation of the relationship between the candidates' Physics performance in WAEC and NECO's SSCE

Physics	N	r	Sig.
WAEC	698	0.330	0.000
NECO			

In Table 4, there is a statistically significant positive relationship between candidates' WAEC and NECO Chemistry performances. This is deduced as the correlation coefficient (r) is 0.330 and this is 0.000 significant at 0.05 alpha level. This warrants the rejection of the null hypothesis of no statistically significant relationship between candidates' Physics performance on the WAEC and NECO SSCE between 2004 and 2006.

**Hypothesis Five:** There is no statistically significant relationship between the candidates' Biology performance in WAEC and NECO's SSCE from 2004 to 2006

Table 5: Summary of Pearson's correlation of the relationship between the candidates' Biology performance in WAEC and NECO's SSCE

Biology	N	r	Sig.
WAEC	1153	0.475	0.000
NECO			

Table 5 shows the correlation coefficient (r) to be 0.475. The relationship between candidates' Biology performance on the WAEC and NECO SSCE shows a statistically significant positive relationship as the correlation coefficient is 0.000 significant at 0.05 alpha level. The value (0.000) being less than 0.05 leads to the rejection of the null hypothesis of no significant relationship between candidates' Biology performance on the WAEC and NECO SSCE and the acceptance of the alternate hypothesis of a statistically significant relationship between candidates' Biology performance on the WAEC and NECO SSCE.

**Hypothesis Six:** There is no statistically significant relationship between the candidates' Literature-in-English performance in WAEC and NECO's SSCE from 2004 to 2006

Table 6: Summary of Pearson's correlation of the relationship between the candidates' Literature-in-English performance in WAEC and NECO's SSCE

Literature-in-English	N	r	Sig.
WAEC	262	0.583	0.000
NECO			

The correlation coefficient (r) in Table 6 is 0.583 for candidates' Literature-in-English performance on the WAEC and NECO SSCE. This indicates a positive relationship that is 0.000 significant at 0.05 alpha level. Since the value at which (r) is significant (0.000) is less than the chosen alpha level of 0.05, the null hypothesis is rejected and the alternate hypothesis of a statistically significant relationship between candidates' Literature-in-English performance on the WAEC and NECO SSCE is accepted.

**Hypothesis Seven:** There is no statistically significant relationship between the candidates' Economics performances in WAEC and NECO's SSCE from 2004 to 2006.

Table 7: Summary of Pearson's correlation of the relationship between the candidates' Economics performance in WAEC and NECO's SSCE

Economics	N	r	Sig.
WAEC	941	0.531	.000
NECO			

Table 7 shows the correlation coefficient (r) as 0.531. This indicates a positive relationship between candidates' Economics performances on the WAEC and NECO SSCE. Since the value at which (r) is significant is 0.000 and is less than the chosen alpha level of 0.05, the null hypothesis of no statistically significant relationship between candidates' Economics performances on the WAEC and the NECO SSCE between 2004 and 2006 is rejected and the alternate of a statistically significant relationship between candidates' Economics performance on both the WAEC and NECO SSCE is accepted.

**Hypothesis Eight:** There is no statistically significant relationship between the candidates' Government performance in WAEC and NECO's SSCE from 2004-2006.

Table 8: Summary of Pearson's correlation of the relationship between the candidates' Government performance in WAEC and NECO's SSCE

Government	N	r	Sig.
WAEC	380	0.275	0.000
NECO			

Table 8 shows the correlation coefficient (r) to be 0.275. This indicates a positive relationship between candidates' Government performance on the WAEC and NECO SSCE. The relationship is 0.000 significant at the chosen alpha level of 0.05. Since the value (0.000) is less than the chosen alpha level of 0.05, the null hypothesis is rejected and the alternate of a statistically significant relationship between candidates' Government performance on the WAEC and NECO SSCE from 2004 to 2006 is accepted.

**Hypothesis Nine:** There is no statistically significant relationship between the candidates' Agriculture Science performance in WAEC and NECO's SSCE from 2004-2006

Table 9: Summary of Pearson's correlation of the relationship between the candidates' Agricultural Science performance in WAEC and NECO's SSCE

Agricultural Science	N	r	Sig.
WAEC	587	0.423	0.000
NECO			

In Table 9 the correlation coefficient (r) is 0.423. This shows a positive relationship between candidates' Agricultural Science performance on the WAEC and NECO SSCE between 2004 and 2006. This relationship is 0.000 significant at the chosen alpha level of 0.05. Thus, since the value at which the relationship is significant (0.000) is less than the chosen alpha level of 0.05, the null hypothesis of no statistically significant relationship between candidates' Agricultural Science performance on the WAEC and NECO SSCE is rejected.

**Hypothesis Ten:** There is no statistically significant relationship between the candidates' Food and Nutrition performance in WAEC and NECO's SSCE from 2004-2006

Table 10: Summary of Pearson's correlation of the relationship between the candidates' Food and Nutrition performance in WAEC's and NECO's SSCE

Food and Nutrition	N	r	Sig.
WAEC	153	0.166	0.041
NECO			

Table 10 shows the correlation coefficient for the above null hypothesis to be 0.166. This indicates a positive relationship between candidates' performance on the WAEC and NECO SSCE. The relationship is 0.041 significant at the chosen alpha level of 0.05. Since the value at which (r) is significant (0.041) is less than 0.05, the null hypothesis of no statistically significant relationship between candidates' Food and Nutrition performance on the WAEC and NECO SSCE is rejected.

**Hypothesis Eleven:** There is no statistically significant relationship between the candidates' Geography performance in WAEC and NECO's SSCE from 2004-2006

Table 11: Summary of Pearson's correlation of the relationship between the candidates' Geography performance in WAEC and NECO's SSCE

Geography	N	r	Sig.
WAEC	541	0.454	0.000
NECO			

In Table 11 the correlation coefficient for the relationship between candidates' Geography performance on the WAEC and NECO SSCE between 2004 and 2006 is 0.454. This is 0.000 significant at the chosen alpha level of 0.05. Since the value at which (r) is significant (0.000) is less than the chosen alpha level of 0.05, the null hypothesis of no statistically significant relationship between candidates' Geography performance on the WAEC and NECO SSCE is rejected. Thus there exists a statistically significant relationship between candidates' Geography performance on the WAEC and NECO SSCE.

## DISCUSSIONS OF FINDINGS

Based on the results of hypotheses one to eleven, this study can conclude that a statistically significant positive relationship exists between candidates' performances on the WAEC and NECO SSCE in Mathematics, English Language, Chemistry, Physics, Biology, Literature-in-English, Economics, Government, Agricultural Science, Food and Nutrition and Geography.

Findings of hypothesis one indicated that there was a statistically significant positive relationship between candidates' Mathematics performance on the WAEC SSCE and NECO SSCE between 2004 and 2006 at 0.05 alpha level. This positive relationship means that candidates who scored well on WAEC's SSCE also did well on NECO's SSCE. Those that performed averagely on WAEC's SSCE, performed likewise on NECO's SSCE and so on. The degree of association or linkage between WAEC's Mathematics SSCE and NECO's Mathematics SSCE from 2004 to 2006 was 0.475. The coefficient of alienation  $\sqrt{1 - r^2}$  was found to be 0.89. The percentage of association ( $r^2 \times 100$ ) was 21.62%. This value represents the magnitude of the relationship between candidates' Mathematics performance on WAEC's SSCE and their corresponding Mathematics performance on NECO's SSCE.

Findings of hypothesis two showed a statistically significant positive relationship between candidates' English Language performances on WAEC's SSCE and NECO's SSCE between 2004 and 2006. This positive relationship means that a candidate's performance on WAEC's English Language SSCE was reflective of their performance on the NECO English Language SSCE. The degree of association or linkage between WAEC's English Language examination and NECO's English Language examination between 2004 and 2006 was 0.512. The coefficient of alienation  $\sqrt{1 - r^2}$  was found to be 0.87. The percentage of association ( $r^2 \times 100$ ) was 23.81%. This value represents the magnitude of the relationship between candidate's English Language performance on WAEC's SSCE and their corresponding English Language performance on NECO's SSCE.

The results related to hypothesis three show that there is a statistically significant positive relationship between candidates' Chemistry performance on the WAEC and NECO SSCE between 2004 and 2006. This positive relationship means that candidates' performances in Chemistry on the WAEC SSCE were comparable to their performances in Chemistry on the NECO SSCE. The degree of association or linkage between WAEC's Chemistry SSCE and NECO's Chemistry SSCE from 2004 to 2006 was 0.293. The coefficient of alienation was 0.95 and the percentage of association was 10.69%.

The findings of hypothesis four demonstrated a statistically significant positive relationship between candidates' Physics performance on the WAEC SSCE and their Physics performance on the NECO SSCE between 2004 and 2006. This positive relationship means that a candidate's performance in one was reflective of his/her performance in the other. The degree of association or linkage between WAEC's Physics SSCE and NECO Physics SSCE from 2004 to 2006 was 0.330. The coefficient of alienation was 0.95 and the percentage of association was 10.43%.

Findings of the test of hypothesis five indicated a statistically significant positive relationship between candidates' WAEC Biology SSCE performance and their NECO Biology SSCE performance between 2004 and 2006. The degree of association or linkage between WAEC's Biology SSCE and NECO's Biology SSCE was 0.567. The coefficient of alienation was 0.82 and the percentage of association was 32.41%. This latter value represents the magnitude of the relationship between candidates' Biology performance on the WAEC SSCE and their corresponding Biology performance on the NECO SSCE.

Results of the test of hypothesis six revealed a positive relationship between candidates' Literature-in-English performance on the WAEC and the NECO SSCE between 2004 and 2006. The r-value was found to be statistically significant at 0.05 alpha level. The positive relationship between candidates' WAEC Literature-in-English SSCE performance and their NECO SSCE performance means that their performance on both examinations was comparable. Thus, candidates that performed well on the WAEC Literature-in-English SSCE also performed well in the same subject on the NECO SSCE. Those that performed poorly on the WAEC SSCE also performed poorly on the NECO SSCE.

The results of the test of hypothesis seven showed a statistically significant positive relationship between candidate's Economics performance on the WAEC SSCE and on the NECO SSCE between 2004 and 2006. This positive relationship means that candidates' Economics performance on NECO's SSCE reflects their Economics performance on WAEC's SSCE. The degree of association or linkage between WAEC's Economics SSCE and NECO's Economics SSCE from 2004 to 2006 was 0.531. The coefficient of alienation was 0.86 and the percentage of association was found to be 26.63%.

In testing hypothesis eight it was determined that a positive relationship existed between candidates' Government performance on the WAEC SSCE and candidates' Government performance on the NECO SSCE between 2004 and 2006. The r-value was deemed to be statistically significant at 0.05 alpha level. This positive relationship means that candidates' performance on NECO's Government SSCE reflected their performance on WAEC's Government SSCE. The degree of association or linkage between WAEC's and NECO's Government SSCE from 2004 to 2006 was 0.275. The coefficient of alienation was 0.96 and the percentage of association was 7.18%. This value represents the magnitude of the relationship between candidates' WAEC Government performance and their corresponding NECO Government performance.

The findings pertaining to hypothesis nine indicated a positive relationship between candidates' Agricultural Science performance on WAEC's SSCE and on NECO's SSCE between 2004 and 2006. The r-value was found to be

statistically significant at 0.05 alpha level. The degree of association or linkage between WAEC's Agricultural Science SSCE and NECO's Agricultural Science SSCE from 2004 to 2006 was found to be 0.423. The coefficient of alienation was 0.91 and the percentage of association was 16.48%.

The test of hypothesis ten showed a positive relationship between candidates' Foods and Nutrition performance on WAEC's SSCE and their performance on NECO's SSCE between 2004 and 2006. The r-value was statistically significant at 0.05 alpha level. The degree of association or linkage between WAEC's Foods and Nutrition SSCE and NECO's Foods and Nutrition SSCE from 2004 to 2006 was 0.166. The coefficient of alienation was 0.99 and the percentage of association was found to be 2.79%.

Finally, the results of testing hypothesis eleven showed a positive relationship between candidates' Geography performance on WAEC's SSCE and their performance on NECO's SSCE between 2004 and 2006. The r-value was statistically significant at 0.05 alpha level. The degree of association or linkage between WAEC's Geography SSCE and NECO's Geography SSCE from 2004 to 2006 was 0.454. The coefficient of alienation was 0.90 and the percentage of association was found to be 19.62 percent. This latter value represents the magnitude of the relationship between candidates' Geography performance on WAEC's SSCE and their corresponding Geography performance on NECO's SSCE.

## CONCLUSION

The underlying motivation for enacting this study was to determine whether a relationship existed between the performances of candidates on the WAEC and the NECO SSCE. A positive relationship or association between the examinations in the respective subjects would mean that those who performed well in a subject on one examination also performed well in the same subject on the other examination (conducted by the other examinations body). A positive relationship between the examinations was in fact found for all eleven subject areas. This implies that the examination standards of both examination bodies are comparable. The comparative associations noted between the WAEC and NECO SSC Examination could, rightfully, be attributable to the fact that they have similarities in the structure and design of their examination, target population, duration of examination, method of grading, syllabus content and overall standardization of examinations. Any divergence from these findings, if it should arise, may be attributable to:

### (a) *Examination Schedules*

WAEC and NECO examinations, both often spread over the course of a month, are sometimes scheduled with an interval of a month between (so, for example, the NECO Geography exam may be scheduled for one month after the WAEC Geography exam). This could allow for additional targeted preparation by exam candidates. The knowledge gained from the first test taken (usually the WAEC) could help in preparation for the latter NECO test and consequently influence the similarity of results found in this study.

### (b) *Subjective Scoring*

A certain percentage of the final grading in both the WAEC and NECO SSC Examination comes from school-based assessment conducted by candidates' respective schools and essay and practical tests are manually scored. Thus it is not possible to rule out some element of subjectivity in scoring.

### (c) *Examination Malpractice*

Some candidates in a particular examination may have gained undue advantage over others. If the same group of candidates is denied this opportunity in their second examination then the results obtained may not be comparable.

## RECOMMENDATIONS

On the basis of the findings of the study, the following recommendations are submitted:

The use of professional processes in test construction such as trial testing of test items, and the use of test and measurement experts in devising test items is likely not being followed by one or the other of the examination bodies. The adoption of a uniform procedure in pre-examination activities by both examination bodies would ensure a higher quality of test items generated for all examinations.

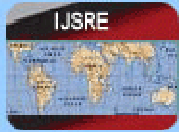
This improvement should be made to curtail extraneous variables that hamper performance in standardized exams, such as examination malpractice, as these may be the cause of discrepancies in candidates' examination performance.

Teachers and school administrators should adequately prepare candidates equally for both examinations in contrast to the current practice whereby more attention and coaching is expended on the WAEC SSC Examinations than on the NECO Examination.

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## Constructing an Emotional Intelligence Radar for Indian Professional College Students

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### Abstract

Emotional Intelligence (EI) is a subject of intensive investigations by academicians as well as human resources and management professionals both in corporate and consultancy. This study on EI highlighted ways to develop students that are personally meaningful, as well as constructive and meaningful for society along with guidelines for teachers and parents. This paper aims at constructing clusters based on the scores of EI, its factors and many other variables for a student's data of 752 (age group 21 – 27 years). As a result of development of clusters; four EI radars were formulated. EI radars developed for professional students could assist in increasing the effort by researchers, academicians, students and their parents to improve EI scores.

**Keywords:** Radar, Emotional intelligence; Adaptability; Organizational development; Leadership, Ability models; Trait models.

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### INTRODUCTION

The EI construct has important clinical and therapeutic implications because it has emerged from an amalgamation of research findings on how people appraise, communicate and use emotion (Salovey and Mayer, 1990). Goleman (1995) suggested that EI could predict academic success better than the traditional measures of intelligences. Zeidner et al. (2004) correctly pointed out that there hasn't been sufficient research to fully understand the impact EI has on academic success. On further research, it has been proved that there is conflicting evidence regarding the relationships between EI and academic success measured as grade point average (GPA). Possibility of greater variability in the measures of EI could have resulted in conflicting evidences. Using the Mayer - Salovey – Caruso emotional intelligence test (MSCEIT) has not observed any correlations between EI and academic achievement (O'Connor and Little, 2003; Bastian et al., 2005). In case of associations between EI and GPA, the results have been found to be inconsistent. In a study made by Parker et al. (2004) with the emotional quotient inventory – youth version (EQ-i -YV) significant correlations were found between 3 subscales – stress management, adaptability and intrapersonal EQ-i. However, overall EI scores did not correlate with



GPA. Newsome et al. (2000) used the EQ-i measure and found no correlations between academic achievement and EI. Similarly, Petrides and Furnham (2004) examined the role of trait emotional intelligence on academic performance. They tested in individuals with low intelligence quotient (IQ) relative to individuals with high IQ. The results suggested that trait EI was related to academic performance only in individuals with low IQ scores. Specifically the study concluded with stating that high trait EI was more important for academic success in individuals with low IQ. Similarly numerous studies were conducted examining the relationship between emotional intelligence and cognition (Barchard, 2003; Brackett and Mayer, 2003) personality (Bastian et al., 2005; Van der Zee et al., 2002) and academic transitions (Parker et al., 2006) of students.

The pioneers of EI also claim that family socialization practices determine the development of EI in children (Rubin, 1999; Schutte et al., 2001; Salovey, and Sluter, 1997). Parental socializations have been found to impact directly child's social and emotional competency as well as work indirectly on the understanding of emotions and gaining social knowledge (Zeidner et al., 2002). Parental socializations take effect through explicit lessons or informal conversations about regulation of emotion. Parental influences also occur through the child's observational capacity. The basic assumption is that a child whose parent displays constructive EI related behavior in everyday life is most likely to implement it as a part of its own behavior. In addition to parents, school setting is one of the most important contexts for learning emotional skills and competencies (Mayer and Salovey, 1997). In the process of emotional learning the individual develops the aptitudes, skills, attitudes and values necessary to acquire higher emotional intelligence. Mayer and Geher (1996) hypothesized that those who are low in emotional intelligence could be educated to recognize, express and regulate their feelings better. It is observed from the literature survey that many studies have been conducted to measure EI and its validity is tested with business organizations. We find a very little evidence of EI application for students in the age group 21-27 years. A restricted view of EI by students, parents, academicians and researchers could miss opportunities. A new framework of EI radar could possibly help avoid that. Therefore, the objectives of this paper are as follows:

- *To develop clusters of students with factors of EI along with the demographic variables considered for the study.*
- *To develop a new framework termed as EI radar to assist students, parents, other stakeholders and academicians in improving EI scores of students. (age group 21 – 27 years)*

## **LITERATURE REVIEW**

EI as a field of extensive study and research emerged after Goleman's publication in 1995. But EI has its generic origin before. In the 17<sup>th</sup> century, Descartes discussed that a person's intelligence was responsible for creating knowledge and validating the truth (PSI Psychology tutor, 2007). He recognized that intelligence is at least partly responsible for what it is that makes each person unique. He also maintained that mind and body are separate entities. In the same century, another English philosopher - Locke believed that a person was born as a blank slate and that intelligence was the ability to reason built up over time by interactions with the environment (PSI Psychology tutor, 2007). Spinoza (1677) believed for the measurement of cognition, emotion and intellect together. He asserted that cognition comprised of emotional cognition, intellectual cognition and some level of intuition. Despite the introduction of the concept of 'intelligence', there was low empirical evidence and introduction of psychometric testing. Appendix- I summarize the sequence of evolution from 1900 –2011 chronologically. We can classify the sequence of continuous evolution of EI in four distinct phases explained in a time frame as depicted in Fig 1.

### **First Phase (1900 – 1919) Theme: Development of IQ Measurement Scale**

This phase is the nascent stage of the development of intelligences. In this phase, 'intelligence' was explained. Intelligence testing began in earnest in France, when in 1904 psychologists Binet and Simon were commissioned by the French government to find a method to differentiate between children who were intellectually normal and those who were inferior. The purpose was to put the intellectually inferior students into special schools, where they would receive more individual attention. This led to the development of the Simon-Binet Scale. The test had children do tasks such as follow commands, copy patterns, name objects, and put things in order or arrange them properly. Binet gave the test to Paris school children and created a standard based on his data. For example, if 70 percent of 8-year-olds could pass a particular test, then success on the test represented the 8-year-old level of intelligence. Following Binet's work, the phrase 'intelligence quotient' or 'IQ' entered the vocabulary. The tests were soon available for widespread use. In 1916 Stanford and Binet modified the IQ test with the exclusion and inclusion of relevant components. Thurstone (cited in Gardner, 1983) believed the existence of a small set of primary mental factors that are relatively independent of one

another and are measured by different tasks. Thurstone nominated seven such factors: verbal comprehension, word fluency, numerical fluency, spatial visualization, associative memory, perceptual speed and reasoning. Identifying these flaws in IQ, psychologists researched further.

### **Second Phase (1920 – 1972) Theme: Expansion of the Theories of Intelligence**

This was the developmental phase of intelligences. This phase markedly showed a lot of research conducted on the development of IQ, introduction of personality parameters and social intelligences. The roots of EI can be traced back to the concept of ‘social intelligence’ coined by Thorndike (1920) to refer to the ability to understand, manage and act wisely in human relations. Thorndike (1920) first identified the concept of ‘social intelligence’ (SI). He defined SI as the ability to understand and manage men and women, boys and girls - to act wisely in human relations. From 1920 through 1937 (cited in Thorndike and Stein, 1937), seven of the ten published studies discussed a measure of SI known as the George Washington SI test, developed by Moss and his colleagues at George Washington University. Thorndike and Stein (1937) criticized the test as there was no data to indicate impact of personality, interests, or academic / abstract intelligence from the social intelligence scores. In addition, the test was found to be heavily loaded in verbal ability resulting in its similarity to the existing measures of academic intelligence. These 17 years were the only serious attempt to measure social intelligence, which unfortunately did not succeed.

Wechsler (1940) observed the impact of non-cognitive and cognitive factors of what he referred as ‘Intelligent behavior’. Maslow (1954) wrote about the enhancement of emotional, physical, spiritual and mental strengths in people. His work set to life the ‘Human Potential Movement’ and to the development of many new sciences of human capacity in the 1970s and 80s. Other researchers Cattell and Butcher (1968) tried to predict both school achievement and creativity from ability, personality, and motivation. The authors succeeded in showing the importance of personality in academic achievement. Studies to more fully assess the relative importance of both ability and personality variables in the prediction of academic achievement were also conducted. There was identification of cognitive as well as non-cognitive behavior. Researchers succeeded in showing the importance of personality in academic achievement. One contribution of this stage: Ability as well as trait personality dimensions are responsible for individual’s success.

### **Third Phase (1973 – 1995) Theme: Development of EI**

There is an identification of limitations of cognitive abilities in an individual in this phase. Existence of multiple intelligences in an individual is identified and concluded with the introduction of EI. McClelland (1973) launched an entirely new approach to the measure of intelligence proposing a set of specific competencies including empathy, self-discipline and initiative. Research in seventies focused on high academic achievement and the reasons for the same. Gardner (1983) discussed intelligence to entail a set of skills of problem solving – enabling the individual to genuine problems or difficulties that one encounters when appropriate to create an effective product. It must also entail the potential for finding or creating problems that lays the groundwork for the acquisition of new knowledge. Gardner (1983) includes intrapersonal and interpersonal intelligences in his theory of multiple intelligences. Intrapersonal intelligence includes attributes leading to self-understanding and mastery with awareness of feelings, psychological insight, ability to manage emotions and behave in ways that meet ones needs and goals (Gardner, 1983; 1993; Goleman, 1995). Interpersonal intelligence involves social competence with the capacity for empathy, altruism, and emotional intimacy (Gardner 1983, 1993; Goleman, 1995).

Gardner (1983) proposed that there are seven primary types of intelligence: verbal, mathematical-logical, spatial, kinesthetic, musical, intra physical abilities (insight, inner contentment) and personal intelligences. The personal intelligences consist of interpersonal intelligence, the ability to understand others, and intrapersonal intelligence, the ability to develop an accurate model of the self and use it effectively to operate throughout life. Gardner (1983) noted that the IQ tests have predictive power for success in schooling but relatively lesser predictive power outside the school context. This is applicable especially when more potent factors like social and economic back ground are considered. Gardner introduced his theory of the various frames of mind, which opened doors to other theories. Triarchic theory as developed by Sternberg (1985) stated that in addition to academic performance, adaptation to environment, experience and the internal world of the individual was equally important. The triarchic theory comprised the following:

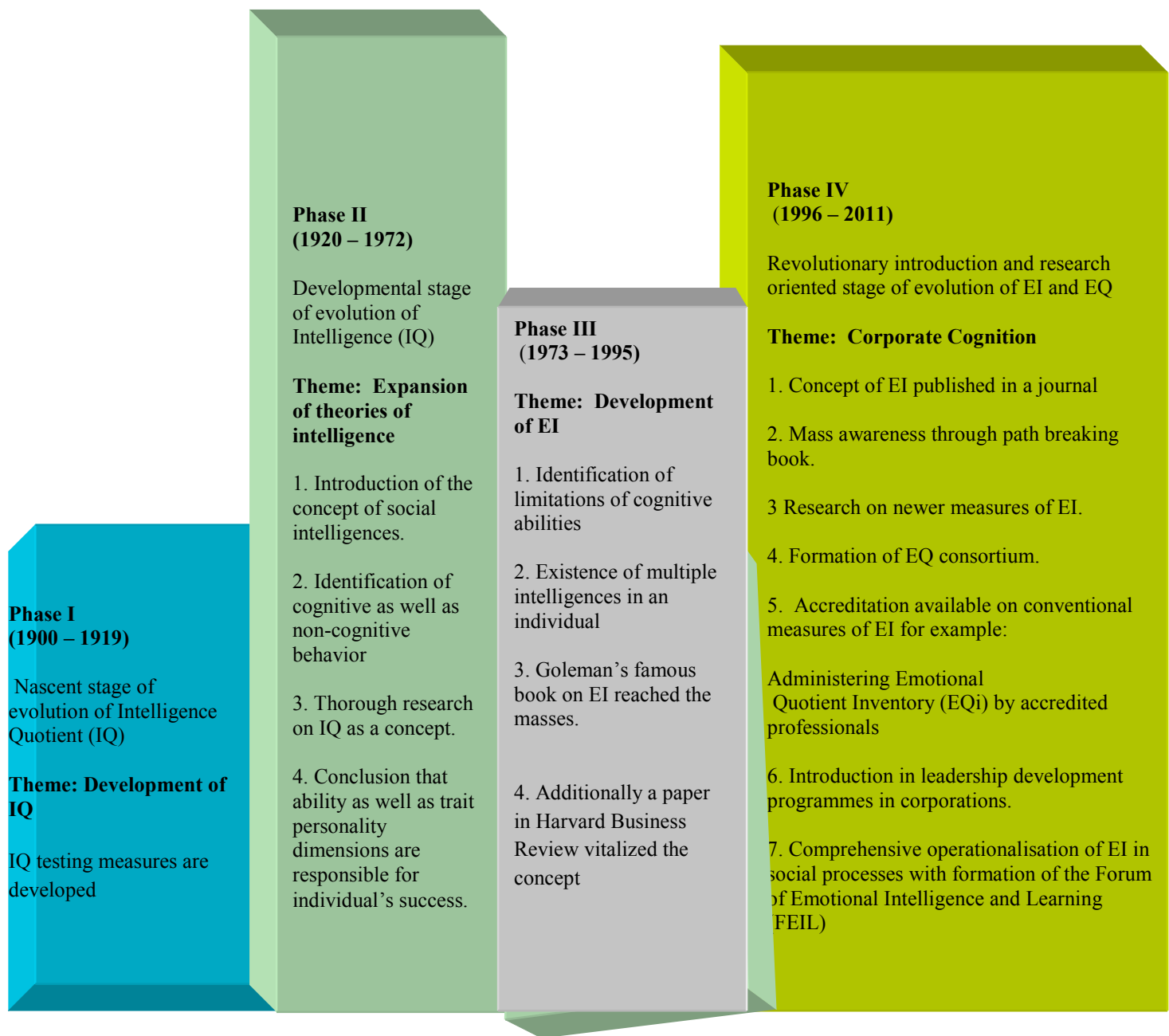
- a. Intelligence and the internal world of the individual
- b. Intelligence and experience and
- c. Adaptation to the environment

Each part of the theory highlights a different aspect of intelligence that is applicable to different groups as well as individuals. Sternberg's theory also included the concept of practical intelligence (Sternberg, 1993; Sternberg et al., 1995). Practical intelligence depends on tacit knowledge that is acquired through day-to-day practical experiences and is basically – what to do in a given situation. Sternberg's theory focuses beyond the cognitive aspect of intelligence and acknowledges Meta intelligence comprising of social, practical and emotional aspects. The theories of Gardner and Sternberg were seen as expansive theories of intelligence and with these base researchers on EI have considered system theory account of intelligence more than the cognitive theories.

The first of the three major theories on EI to emerge was that of Bar-On (1988). In his doctoral dissertation he coined the term emotional quotient (EQ), as an analogue to intelligence quotient (IQ). In 1990, Salovey and Meyer described that over the last few decades the beliefs about emotions and intelligence have both changed. Intelligence was once perfection, and the people soon recognized that there was more than intelligence to life. Whereas emotion was once perdition and people were recognizing that it might have substantive value. Goleman published his famous book on EI 'Emotional Intelligence: 'why it can matter more than IQ' in 1995 which lead to mass awareness. Additionally a paper published in Harvard Business Review vitalized the concept. Thereafter, articles on EI began to appear with increasing frequency with empirical work on the construct along with scientific theoretical literature with academic interests. Any science has its detractors and no science is complete without its fair share of them. EI pioneers founded their theories at different times and on a different platform. Salovey and Bar-On framed their theories as general theories of social and EI and EI respectively, Goleman's theory is specific to the domain of work performance. Salovey and Mayer's theory along with Bar-On's theory was considered for its suitability in children and adolescents.

#### **Fourth Phase (1996 – 2008) Theme: Corporate Cognition**

The theme of the fourth phase is "corporate cognition". Cognition is a concept used in different ways by different disciplines, but is generally accepted to mean the process of thought. Path-breaking introduction of EI marked this phase. Many accreditation programs, corporate training programs, training students have been developed to enhance cognitive as well as non-cognitive skills of individuals. EI is being recognized as a set of competencies to develop leaders and decision makers. Emotionally intelligent leadership appears to be one key contributor to the development of a psychologically healthy workplace. Leaders are directly influencing morale, retention, commitment, satisfaction and perceptions of stress. A variety of approaches are being tried by corporations to consider deploying EI in the development of a healthy workplace. Six Seconds in USA and Javelina's A and M Texas University has programs devised for enhancing the EI of students. Formation of a consortium for research on EI for the western countries and FEIL (Forum of Emotional Intelligence and Learning) in India concentrates on research, education, corporate training and generating social awareness of EI. The next section describes the research design for our study.



**Figure 2: Stages of Development of EI**

### **Factors affecting EI for professional students**

There are two models of EI – Ability models and Mixed models. Intelligence involving emotions constitute the Ability models (cited in Goldenberg et.al 2006). Such models define EI in a traditional sense (e.g. Mayer and Salovey 1997). They are a concept comprising a set of mental abilities with emotions and processing of emotional information. The essential elements of the ability model are Emotional perception and expression, emotional facilitation of thinking, emotional understanding and emotional regulation. In contrast, mixed models have EI as partly or wholly a personality-like trait. Mixed models make references to abilities in the processing and use of emotional information. Also there is a combination with other traits and characteristics such as optimism, motivation and social relationships (Bar-On, 2000, 2001; Goleman 1995, 1998). However Matthews (2003) noted that mixed models do not relate to the concept of emotion specifically.

Bar- On (2000) has identified 5 factors namely intrapersonal ability, interpersonal ability, stress management, adaptability and general mood. This study has factors outlined by Bar-On and the relationship of emotional intelligence with interpersonal ability, intrapersonal ability, stress management, adaptability and general mood with Indian students of

professional colleges is tested. Intrapersonal ability consists of the ability to identify feelings correctly, recognizing and labeling one's feelings. Interpersonal ability deals with the relationship with peers, subordinates and superiors, identifying emotions of others and being empathetic. Stress Management consists of abilities like responding to a stressful event without an emotional outburst. Adaptability involves skills related to management of change and of abilities like being to adjust one's emotions and behavior to changing situations or conditions. General mood is the ability to enjoy life and maintain a positive disposition. This study involves usage of these five factors which are described in the subsequent sections.

## RESEARCH DESIGN

This study is exploratory in nature and four clusters are formed. Cluster analysis leads to the formation of an EI radar and EI Competency ladder.

### Participants

The sample size comprised a total number - 761 students from 7 different types of professional colleges. 9 students did not complete the main battery of measures could not be considered hence the main sample size reduced to 752 students – all of them belonging to age groups 21- 27 yrs. 434 (57.712%) of respondents were male and 318 (42.288%) female.

Data of students in the age group of 21 – 27 years was collected from management institutes, engineering colleges and colleges providing Master’s in Computer Application degrees. Two institutes provided residential courses and three institutes provided autonomous education.

The criterion for classification for students (21 – 27 years) based on the courses offered by institutes, boarding type of students and differentiation of college students is shown in Table 1. These students represent diverse socio – economic background characterized by upbringing of students with differing levels of parental literacy, parental occupation and family income. The criterion for classification based on parental characteristics as shown in table 5.4 in section 5.4.1 is also considered for this sample of students (aged 21 – 27 years).

Table 2 depicts the category wise classification statistics for students (21 – 27 years) (n = 752) based on their gender, occupation of father and mother along with literacy levels of father and mother. Lastly the count of students based on family income is also considered. Ratio analysis revealed that of 623 MBA students, 53.4% were males. Of the 83 MCA students, 68.67% were males and of the 26 Engineering students, 92.3% were males. When open workshops were conducted, MBA students were more interested than MCA and engineering students.

A covering letter was drafted to the head of the institution –college and school, which included general information about the research work and instrument - purpose of the study, confidentiality of the responses and request for returning the filled questionnaire. Administering questionnaires from February to September 2008 collected data. A workshop for students along with personal interviews for teachers and the principal were two additional activities that were conducted.

### Procedure

Participants were asked if they would volunteer to study on "emotional intelligence" Participants completed the Bar-On Emotional quotient inventory (2000). Professional college students were also asked to complete the EQi after their lecturing hours in the premises of their institute. In exchange for their participation, individuals were provided with a confidential feedback report on their results of the instrument.

Table 1: Criteria for Classification for Students (21 – 27 years)

Criterion	Type
Degree/Diploma offered by institutes	University approved courses – AICTE approved autonomous diploma
Boarding	Residential – Non residential
Program	Management – Engineering - Computer application

Table 2: Classified Data of Students' (21 – 27 years) of 752 Samples

Criteria	Total number of Students	MBA Students	MCA Students	Engineering Students	Residential Students	Non Residential students	Mumbai University Affiliated colleges	AICTE Approved Autonomous Institutions
Male	434	333	57	24	196	238	224	210
Female	318	290	26	2	69	249	208	110
<b>Father's occupation</b>								
0	7	5	2	0	1	6	4	3
1	132	101	29	2	18	114	54	78
2	146	95	42	9	18	128	82	44
3	397	293	94	10	116	281	209	188
4	69	44	20	5	20	49	34	35
<b>Mother's occupation</b>								
0	2	1	1	0	0	7	1	1
1	688	505	161	22	167	521	345	343
2	50	25	22	3	6	44	32	18
3	5	4	1	0	1	4	1	4
4	7	4	3	0	0	7	4	3
<b>Father's Literacy level</b>								
1	225	188	35	2	85	140	76	149
2	457	308	127	22	70	387	269	188
3	70	43	25	2	19	51	38	32
<b>Mother's Literacy level</b>								
1	431	347	66	18	126	305	182	249
2	309	185	116	8	47	262	194	115
3	12	7	5	0	1	11	7	5
<b>Family Income</b>								
Upto 1,00,000	752	539	187	26	174	578	383	369
1,00,000 to 5,00,000	161	119	40	2	21	140	69	92
Above 5,00,000	254	194	57	3	54	200	129	125

## Measures

EI for students in the age group of 21 -27 years was measured using Bar - On (1997<sup>b</sup>) which consists of 133 statements measuring five EI factors: intrapersonal EQ-i, interpersonal EQ-i, adaptability EQ-i, stress management EQ-i and general mood EQ-i. The EQ-i is further divided into fifteen sections. The first, intrapersonal EQ-i includes measures of self-awareness, self-actualization and independence, the ability to assert oneself, and the ability to view oneself positively. The second, interpersonal EQ-i includes such skills as empathy, interpersonal relationships and social responsibility. The third, stress management EQ-i, includes skills such as stress tolerance and impulse control. The fourth, adaptability EQ-i includes flexibility, problem solving and reality testing. Finally, general mood EQ-i includes happiness and optimism.

Responses are rated by the participant on four-point Likert scales, ranging from 1 for "very seldom or not true of me," to 5 for "very often true or true of me." The final item is a self – report on honesty of responding and is not included in any scale. The scales and subscales are intrapersonal EQ-i (emotional self – awareness, assertiveness, self – regard, self – actualization, independence); interpersonal EQ-i (empathy, interpersonal relationships, social responsibility); adaptability EQ-i (problem solving, reality testing, flexibility); stress management EQ-i (stress tolerance, impulse control); general mood EQ-i (happiness, optimism). Higher scores indicate a higher level of emotional intelligence. EI scores were derived by using item scales as given in the manual.

## Computation of EI Scores

As per the technical manual of the EQi the scores of students were computed. Data sheets were compiled in Microsoft excel sheets and finally data was analyzed using the SPSS 11.5 for MS Windows.

### Descriptive Statistics

As per guidelines provided by Multi Health Systems the scores of students were computed and results compared with findings by Hemmati et al (2004).

Table 4: Statistics for Students in the Age Group of 21 – 27 years

	Minimum		Maximum		Mean		Std. Deviation		Std. error	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Age</b>	21	21	27	27	24.41	23.55	1.15	1.11	0.28	0.34
<b>EI</b>	76	79	130	130	94.18	96.9	14.68	13.51	0.26	0.31
<b>Intrapersonal EQ-i</b>	123	124	165	165	97.85	96.32	14.42	14.02	0.28	0.34
<b>Interpersonal EQ-i</b>	92	91	122	123	90.06	90.88	16.94	17.98	0.26	0.31
<b>Stress Management EQ-i</b>	42	44	80	81	88.31	87.55	13.47	12.54	0.03	0.03
<b>Adaptability EQ-i</b>	65	65	111	111	95.22	97.73	16.43	16.78	0.26	0.32
<b>General mood EQ-i</b>	51	52	69	75	87.92	88.54	15.09	15.87	0.26	0.31

- EI and its factors had 65 as lowest score.
  - In case of EI, intrapersonal EQ-i and adaptability EQ-i scores are 120, 165 and 111 respectively.
  - In case of general mood EQ-i the maximum score is 75.
- Stress management EQ-i and interpersonal EQ-i have maximum score of 81 and 123 respectively.

### Cluster Analysis

Cluster Analysis is a multi-variate procedure (Nargundkar, 2002) is a group of similar objects. Cooper and Schindler (2007) have identified five basic steps:

- Selection of sample to be clustered.
- Definition of the variables on which to measure the objects.
- Computation of the similarities through correlation.
- Selection of mutually exclusive clusters.
- Cluster comparison

Based on these steps EQ-i and its factor scores of students in the age group of 9 – 14 years were classified as:

- 65 – 89: low EI
- 90 – 110: high EI
- Above 111: very high EI

The intrapersonal EQ scores were classified as:

- 65 – 89: low intrapersonal ability
- 90 – 110: high intrapersonal ability
- 111 - 130: very high intrapersonal ability

The interpersonal EQ scores were classified as:

- 65 – 89: low interpersonal ability
- 90 – 110: high interpersonal ability
- 111 - 125: very high interpersonal ability

The adaptability EQ scores were classified as:

1. 65 – 89: low adaptability
2. 90 – 110: high adaptability
3. 111 - 130: very high adaptability

The stress management EQ scores were classified as:

1. 65 – 89: low stress management
2. 90 – 110: high stress management
3. 111 - 126: very high stress management

The general mood EQ scores were classified as:

1. 65 – 89: low general mood
2. 90 – 110: high general mood
3. 111 - 122: very high general mood

The basic clustering methods (Nargundkar, 2002) used in computer packages are:

- a. Hierarchical clustering or Linkage methods
- b. Non - hierarchical clustering or Nodal methods

In this study, there are 4 clusters of students according to the category of EQ-i scores and its factors. Table 5 depicts the number of cases in each cluster and signifies that each cluster is determined by significant number of cases.

Table 5: Number of Cases in each Cluster

	1	227.000
<b>Cluster</b>	2	187.000
	3	196.000
	4	142.000
<b>Valid</b>		752.000
<b>Missing</b>		0.000

Final cluster centers describe the mean value of each variable for each of the 4 clusters. The brief description of each of the 4 clusters as depicted in Table 6 is given below:



## Cluster 1

Students belonging to this cluster are 23-year males having high EQ-i score. They have high scores of intrapersonal EQ-i, interpersonal EQ-i, stress management EQ-i, adaptability EQ-i and general mood EQ-i. Their father manages their own business and mother is housewife. Father is a graduate and mother is studied till the 10<sup>th</sup> standard with family income between Rs. 100,000 and 500,000 per annum.

## Cluster 2

Students belonging to this cluster are 23-year-old males with high EQ-i score. They have high scores of intrapersonal EQ-i, interpersonal EQ-i, stress management EQ-i, adaptability EQ-i and general mood EQ-i. Their father is in service with banks, in governmental organizations or private firms as officers, a supervisor and other clerical positions and mother is housewife. Father is a graduate and mother is studied till the 10<sup>th</sup> standard with family income between Rs. 100,000 and 500,000 per annum

## Cluster 3

Students belonging to this cluster are 25-year-old females with low EQ-i score. They have low scores of intrapersonal EQ-i, interpersonal EQ-i, stress management EQ-i, adaptability EQ-i and general mood EQ-i. Their father is working for lowly jobs such as peons, sweepers and watchman and mother is housewife. Both parents are graduates with family income between Rs. 100,000 and 500,000 per annum.

## Cluster 4

Students belonging to this cluster are 23-year-old males with low EQ-i score. They have low scores of intrapersonal EQ-i, interpersonal EQ-i, stress management EQ-i, adaptability EQ-i and general mood EQ-i. Their father manages their own business and mother is housewife. Father is a graduate and mother is studied till the 10<sup>th</sup> standard with family income above Rs. 500,000 per annum.

Table 6: Final Cluster Centers

	Cluster			
	1	2	3	4
Age	23	23	25	23
Gender	1	1	2	1
Category of intrapersonal EQ-i	2.20	2.12	1.64	1.64
Category of interpersonal EQ-i	2.45	2.01	1.31	1.26
Category of stress management EQ-i	2.70	2.25	1.34	1.35
Category of adaptability EQ-i	2.41	2.34	1.42	1.39
Category of general mood EQ-i	2.05	2.6 0	1.24	1.24
Category of Total EQ-i	2	2	1	1
Fathers Occupation	3	2	1	3
Mothers Occupation	1	1	2	1
Father's Literacy level	2	2	2	2
Mother's Literacy level	1	1	2	1
Income	2	2	2	3

## FORMULATION OF EI RADAR

There are certain important issues and challenges facing education at college level. In this research, cluster analysis is an exploratory data analysis tool. Cluster helped formulate the radar. Radar used in seas transportation is a system that uses electromagnetic waves to identify the range, altitude, direction, or speed of both moving and fixed objects such as aircraft, ships, motor vehicles, weather formations, and terrain (Malekar & Mohanty, 2011). In other words, a radar system is used

to detect the position and / or movement of objects. It is similar to a map. EI radar displays the position of scores of EI and its factors for 4 clusters which were formed in cluster analysis. This tool presents and relates to all of the factors through which a professional college can look for opportunities to increase EI. We have developed and applied a new framework called the EI radar and it is based on the study conducted till date.

**The following are the objectives of EI radar** (Malekar & Mohanty, 2011)

- a. Understanding: Broaden and deepen the construct of EI.
- b. Managing: Identify dimensions, which contribute to managing EI.
- c. Improving: Identify best practices to improve EI related to culture, ethnicity of students.
- d. Institutionalizing: Develop framework for enhancing EI of students.

We have identified 4 clusters and the cluster components are age, gender, father's occupation, mother's occupation, father's literacy, mother's literacy and income. Similar to a map, the EI radar consists of five factors that serve as anchors to guide academicians to identify a methodology that would surely increase EI.

We have identified four clusters and the cluster components are age, gender, father's occupation, mother's occupation, father's literacy, mother's literacy and income. Similar to a map, the EI radar consists of five factors that serve as anchors to guide academicians to identify a methodology that would surely increase EI. EI radar shown in Fig 2 is for students (age group 21- 27 years).

Based on the empirical analysis, various factors affecting EI helped to identify and define the radar's 5 dimensions which were:

1. Intrapersonal EQ-i
2. Interpersonal EQ-i
3. Stress management EQ-i
4. Adaptability EQ-i
5. General mood EQ-i

We have identified 4 clusters and the cluster components are age, gender, father's occupation, mother's occupation, father's literacy, mother's literacy and income. Similar to a map, the EI radar consists of five factors that serve as anchors to guide academicians to identify a methodology that would surely increase EI. EI radars are shown for students (age group 21- 27 years). See individual article volume 4(2) ([www.ijstre.com](http://www.ijstre.com))

To visualize holistically and systematically

To brainstorm and explore the dimensions of EI in a systematic manner

To diagnose and identify students with low scores

To prescribe and suggest a curriculum for EI development

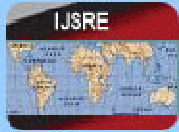
## **CONCLUDING REMARKS**

This paper discussed the four stages of evolution of EI. This exploratory study, with a sample size of 752 students aimed at providing a direction to improve their EI scores. Four clusters formed assisted in forming four clusters to provide direction to the students. Education, training, and counseling approaches aimed at developing personal excellence in individuals will provide a widely applicable model for making the world a better place (Malekar and Mohanty, 2011). Even though the primary attention of education is academic performance, there is simply too much convincing evidence that schools and colleges should not and cannot neglect the development of EI skills. Emerging trends necessitate new studies and applied research on the contributions of the emotional mind and the emotional domain of learning. Building healthy and productive students requires the active and intentional development of EI skills and competencies as normal and integral part of the process of education. Thus the final purpose of the research is to create a platform that can practically be used to measure EI and its significant factors and thus provide guidance in the development of youths pursuing career oriented studies to build modern India.

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## Using Focus Group Interviews to Research Adolescents' Beliefs and Perceptions of Sex, Sexuality, HIV and AIDS in Educational Settings: Methodological Successes and Challenges

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### Abstract

The paper draws attention to the relationship between the research process and the production of knowledge on adolescent sexual behaviours and HIV and AIDS issues by adolescents in Botswana schools. Within this context the paper addressed the successes and challenges experienced in conducting single and mixed sex semi-structured focus group interviews with adolescents in four junior secondary schools. It also explored adolescents' feelings about participating in focus group interviews that explore issues regarding sex, sexuality, HIV and AIDS. Data drawn from the interviews as well as researchers' reflections suggest that the use of focus groups as a qualitative data collection strategy opened possibilities for adolescents to share diverse knowledge, experiences and perspectives on sex, sexuality, HIV and AIDS. Likewise, it suggests that various factors enhanced and limited adolescents' participation in focus group interviews. Moreover, this data also provides opportunities for researchers to rethink and problematize ways in which they conceptualize and utilize focus group interviews in research-based knowledge with adolescents in particular. Although the intention of this paper is not to make generalizations about the use of focus group interviews within the Botswana context, the findings reported in this paper have implications for developing and promoting culturally sensitive research approaches relevant to this country/society.

**Keywords:** HIV/AIDS, Focus group interviews, Adolescents, Research methodology, Gender, Sexuality and Education, Reflexivity

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## **INTRODUCTION**

In researching about the experiences of individuals and communities in varied social contexts, qualitative researchers often encounter both methodological successes and challenges. The successes and challenges are important components of the research experience. It is important for researchers to know which processes and data collection strategies worked or did not work in order to inform future research activities. For qualitative researchers, “the process that is occurring as well as the product or outcome” (Creswell, 2003, p. 199) are equally significant in doing research. This paper draws attention to the relationship between the research process and the production of knowledge on adolescent sexual behaviours and Human Immune Virus and Acquired Immune Deficiency Syndrome (HIV and AIDS) issues by adolescents in Botswana schools. More specifically, it presents the reflections of a team of researchers on the successes and challenges experienced in conducting single and mixed sex semi-structured focus group interviews with adolescents focusing on adolescent sexual behaviours and HIV and AIDS issues. Of significance is that the larger study from which this article emerged focused on: (a) examining the influences of socio-cultural, family and school factors on 15-17 year old adolescents’ sexual behaviours, (b) identifying mediators of family and school influences on adolescents sexual risk behaviours and (c) designing appropriate and culturally sensitive family and school interventions for 15-17 year old adolescents to facilitate their effectiveness in coping with sexuality and HIV/AIDS issues.

The first case of AIDS in Botswana was discovered in 1985. Since then Botswana joined the rest of the world in keeping a closer look on HIV and AIDS. Botswana is among the countries in Sub-Saharan Africa with the highest HIV prevalence. The most recent results of the Botswana AIDS Impact Survey (BAIS) III of 2008 shows a national prevalence of 17.6% of which 20.4% is for females and 14.2% is for males (Republic of Botswana, 2009). BAIS is a population-based survey involving males and females between 10 and 64 years of age. According to BAIS III of 2008 the age group with the highest prevalence is that of 40 to 44 years at 40.6% followed by the age group 35 to 39 at 40.5%. In addition the gender distribution reflects that in general females have the highest prevalence rate compared to their male counterparts and this was also true in BAIS II of 2005. Of significance too is that a close analysis of the HIV/AIDS situation in Botswana shows that young women and girls are more vulnerable to HIV infection than their male counterparts (Republic of Botswana, 2009). Within this context, trends show that girls aged 15 to 19 are twelve times more likely to be infected than boys in the same age category.

Botswana has responded to the epidemic by putting in place several policies and intervention programmes to prevent HIV transmission and mitigate its impact. While the focus was initially on health aspects, that is initially a medical model of intervention, a shift towards a multi-sectoral and coordinated response emerged in the 1990s. The response to HIV and AIDS in Botswana is guided by the National Strategic Framework for HIV and AIDS which aims to eliminate the new incidences of the pandemic and to reduce its impact through collaborative partnerships between government ministries, local authorities, Non-governmental organizations, the private sector and international development partners. Botswana is also benefiting from responses to HIV and AIDS in the SADC region which are being implemented in the context of the Southern African Development Community (SADC) HIV and AIDS Strategic Framework and Programme of Action for 2003-2007 (Southern African Development Community, 2003). The key features of the responses include the prevention of infection through education and lifestyle changes, treatment, testing (pre and post-test services), People Living with HIV and AIDS (PLWHA) participation and community mobilization, support to individuals who are affected or infected, the provision of information and education to improve understanding of the pandemic and to reduce the stigma associated with it. In addition, the mainstreaming of HIV and AIDS awareness in the activities of all institutions is a key intervention strategy. Within the context of the education system, HIV/AIDS and sexuality issues are viewed as emergent curriculum issues that have to be infused in different school subjects such as Setswana and English.

## **REVIEW OF RESEARCH LITERATURE**

This chapter draws on the research literature that exists on the use of focus group interviews in diverse socio-cultural settings with diverse participants such as on-line with eleven to eighteen year olds (e.g. Fox, Morris, & Rumsey, 2007). This section does not present a detailed review of the research literature on the methodological successes and challenges of focus group interviews since this literature has already been documented by various researchers (Bassett, Beagan, Ristovski-Slijepcevic, & Chapman, 2008; Chilisa, Dube, Tsheko, & Mazile, 2005; Culley, Hudson, & Rapport, 2007; Fox et al., 2007; Hennessy & Heary, 2005; Lewis, 1992; Maynard-Tucker, 2000; Montell, 1999; Morgan, Gibbs, Maxwell, & Britten, 2002). Yet, documenting this knowledge adds significantly to emerging literature on Botswana that explores research methodology issues (e.g. Chilisa, 2007; Jankie, 2004, 2007; Koloji, 2007; Ntseane, 2007) especially at a time when researchers world-wide are advocating for the use of culturally sensitive research approaches in specific socio-political contexts (e.g. Bishop, 2005; Chilisa, 2007; Chilisa & Preece, 2005; Jankie, 2007; Koloji, 2007; Mkabela, 2005,

Jankie, 2004; Ntseane, 2007; Ryen, 2007; Smith, 1999, 2005; Tillman, 2002). Moreover, researchers who have used focus groups as a data collection strategy have situated their work in diverse theoretical/conceptual frameworks. As Maynard-Tucker (2000) rightly explains, “overall, there is a multitude of methods for conducting focus group, each one adapted to a particular environment” (p. 397). Embedded in this, is the socially constructed, heterogeneous, complex and contested nature of focus group interviews. Despite this, it is relevant to mention that focus groups as a data collection strategy that has been used successfully in cross-cultural research (Culley et al., 2007) has been used to investigate various facets related to HIV and AIDS epidemic. To illustrate, in Africa focus group interviews have been used to investigate teachers’ feelings about participating in HIV/AIDS related programmes in Malawi (e.g. Kachingwe et al., 2005), intersections between sexuality, gender and HIV/AIDS in secondary schools in Botswana (e.g. Chilisa et al., 2005), and issues that contribute to “self-disclosure of a positive HIV diagnosis” in Kenya (e.g. Miller & Rubin, 2007).

## RESEARCH METHODOLOGY

The focus group interview data reported in this paper is part of a larger four phased on-going collaborative research project involving teams of researchers from the Universities of Botswana and Pennsylvania. The main objectives of the larger study as indicated in the project proposal include examining “socio-cultural, family and school influences on Botswana 14 – 17 years adolescents’ sexual behaviours” as well as to construct family and school-based interventions “that are age and cultural appropriate for the group and to test if the interventions have produced short term and long term effects”. The authors of this article are part of the research team that conducted the school-based component of the study in Botswana.

Research methods are social constructions that have to be used appropriately with different groups of participants. Qualitative data collection strategies include the use of focus groups to produce “interesting, rich and complex data” (Culley et al., 2007, p. 102) on diverse, specific issues that researchers are interested in investigating in specific communities. The focus group interviews conducted with adolescents were important for understanding and making sense of their emic perspectives on adolescent sexual behaviours and HIV and AIDS issues. Botswana adolescents as members of their society learn about these issues in the course of social interactions within and outside the classroom. In the process, they develop certain beliefs, values, assumptions, insights and ways of knowing about adolescent sexual behaviours and HIV and AIDS issues. This makes it necessary for adolescents to speak for themselves and to be listened to with regard to what these issues mean in their lives. Within this context, engaging adolescents in focus group interviews opened possibilities for them to rethink, interpret and share feelings about adolescent sexual behaviours and HIV and AIDS issues for purposes of making informed, appropriate choices on these sensitive and often controversial issues.

Eleven focus group interviews with single sex and mixed sex groups of adolescents were conducted in four public junior secondary schools in two districts in Botswana. Each focus group consisted of ten to twelve students. The ages of adolescents in these groups ranged from fourteen to seventeen years. Purposeful sampling was used to identify possible adolescents for the study. Teachers who teach subjects that incorporate topics on sexuality and HIV and AIDS were requested to assist in identifying adolescents who were willing to share their knowledge, beliefs, assumptions and opinions on what adolescents know and think about issues of sexuality and HIV and AIDS. To facilitate dialogue with adolescents on these matters, a pre-focus group questionnaire and semi-structured interview guides were used. The pre-focus questionnaire requested adolescents to share information such as their age, gender, religious affiliation, language spoken at home, sexual activities and experiences on consumption of alcohol and dagga (marijuana). With regard to interview guides, two overlapping protocols based on the theory of planned behaviour were utilized, whose main intention, as stated in the protocols, was to “solicit information from adolescents aged 14 – 17 years in schools and Botswana in general about risks that expose adolescents to STDs and HIV infection” in order to “develop interventions aimed at dissuading Botswana adolescents from engaging in behaviours that increase their risk for sexually transmitted diseases including HIV”. Within this context, both protocols invited adolescents who had consented to participate in the study to share knowledge and insights on: adolescents’ views about the proposed intervention programme adolescents’ lifestyle, as well as their feelings about participating in focus group interviews. However, the two protocols differed in that whereas one explored information on adolescents’ sexual behaviours and abstinence, condom use, multiple sex partners as well as gender violence, the other one focused on messages communicated through songs and metaphorical language/sayings as well as the relationships of adolescents with their parents. Adolescents gave permission for their views on these matters to be recorded through the use of digital voice recorders.

In most cases, focus group interviews were facilitated by at least two members of the research team. This made it possible for one team member to moderate the interview process whilst the other concentrated on writing interview notes and noting any other significant discourses that occurred during the interview process. It is important to note that on a few occasions, focus groups were conducted by individual team members. It is essential for qualitative researchers to conduct research using languages that are accessible to the participants. The importance of this lies in that, “language stores,

upholds and legitimises the value systems of society. For research problems to be understood within the value system of the researched people, it is important to incorporate in the research process the language that frames the problem” (Chilisa & Preece, 2005, p. 55). In conducting focus group interviews, adolescents were encouraged to share their knowledge and insights in English and/or Setswana. Both of these languages are core subjects in the junior secondary school curriculum.

Data from focus group interviews was triangulated with data from researchers’ reflective questions in order to identify the methodological successes and challenges encountered using focus group interviews. In as much as “keeping and using reflective research journals can make the messiness of the research process visible to the researcher who can then make it visible for those who read the research” (Ortlipp, 2008, p. 704), so can reflective questions based on specific aspects of the overall research process. Possibilities were opened for self-reflections by team members regarding what it means to conduct focus group interviews with adolescents in Botswana schools when they were invited by team members co-authoring this article to share critical, detailed experiences through E-mail of the methodological issues that emerged from the interviews.

## **DATA ANALYSIS**

Data from focus group interviews was transcribed for purposes of analyzing and categorizing the information in order to identify themes on methodological successes and challenges. Likewise, content analysis was applied to researchers’ fieldnotes and responses to reflective questions for the same purpose. All the data was read and reread in order to identify methodological successes and challenges emerging from the study. Data from these sources was triangulated to arrive at the themes discussed in this paper.

## **RESEARCH FINDINGS**

### **Methodological Successes**

This section focuses on the successes of using focus group interviews with adolescents in four junior secondary schools in Botswana that participated in the study. The successes discussed below are captured by the following themes: (a) “these are dot com kids they just love the use of tape recorders”, (b) adolescents’ feelings about participating in focus group interviews (c) nature of researchers’ interactions/relationships with adolescents and (d) nature of adolescent to adolescent interactions. Of significance is that the successes unfolded differently in the various focus group interviews.

#### **“These are Dot Com kids they Just Love the Use of Tape Recorders”**

One factor that contributed to the success of focus group interviews was the use of technological devices. Research indicates that participants react differently to the use of technology in interviews. For example, in discussing the methodological challenges they encountered in interviewing adolescents for their study on “food decision-making” in some parts of Canada, Bassett et.al (2008) state that tape recorders had a “silencing effects” on them. Prior to conducting focus group interviews reported in this article, permission was sought from adolescents to audio-tape their discussions. It was explained to adolescents that audio-taping interviews was essential for transcribing interviews for data analysis purposes as well as for expanding researchers’ interview notes and capturing most of the interview interactions. In reflecting on whether the use of technological devices intimidated adolescents or enhanced their participation only two team members explained that digital recorders that were used intimidated some adolescents only at the beginning of the interview. Other team members expressed that adolescents felt free to share their knowledge and insights despite the use of digital recorders and the fact that the topic on sexuality is often considered sensitive and a potentially taboo topic in their society. This is summarized in the following excerpts:

“These are dot com kids, they just loved the use of tape recorders, because this is something close to their regular devices like CD’s, DVD’s, videos. Adolescent yearn to be heard and seen, this was an opportunity for them”.

“Adolescents were intrigued by the use of digital audio tapes. They could hardly wait for their turn and once they got hold of the device they would not let go”.

#### **Adolescents’ Feelings about Participating in Focus Group Interviews**

One of the concerns of the researchers was to identify adolescents’ feelings about their participation in focus group interviews. It was the intention of the team members to create an environment in which adolescents would feel free to share their knowledge and insights, and in the process contribute meaningfully to generating research-based knowledge on



issues of adolescent sexual behaviours and HIV/AIDS. It was therefore important for team members to reflect on how adolescents felt about participating in focus group interviews. To achieve this, adolescents were invited to share their feelings of being focus group interview participants. Specifically, they were invited to respond to the questions; how do you feel about participating in this focus group session? What was easy? What was hard? The positive feelings of adolescents are illustrated in the following excerpts from an interview with boys in one secondary school:

“I think it’s a good thing to me because you get informed on what you do not know through discussions”

“I learnt a lot of things I didn’t know”

“I feel like the discussion should continue forever”

“I am grateful I collected a lot of information from this discussion”

“It made me feel free to talk about HIV/AIDS”

In a parallel situation, when adolescents were requested to identify what was easy about the interview sessions one responded by saying “the whole thing was easy. I mean they were talking about things we already know.” Likewise when the facilitator thanked them for participating in the focus group interview and sharing valuable information, all the girls in one focus group responded by saying, “we are happy we talked to you about some of our problems.” Probably adolescents felt positive about the interviews because they felt that they were sharing information and knowledge that would be beneficial to them as well as their peers. While acknowledging that the intervention would have disadvantages, most of them however felt that the planned intervention programme was worthwhile and therefore adolescents and their parents would benefit from participating in it. At another level, they might have felt comfortable to share their knowledge and insights due to the fact that at the beginning of the study they were encouraged to share their views freely. This is evident in phrases like: “there is no wrong answer here” – stated at beginning of the interview. In all, the lengthy detailed responses provided by some adolescents indeed suggest that they felt comfortable sharing knowledge and insights on key concerns of the study.

### **Nature of Researchers’ Interactions/Relationships with Adolescents**

Researchers as main instruments for collecting qualitative data cannot divorce themselves from the research process. Hence, the need to interrogate or problematize whether and in what ways their interactions or relationships with adolescents hindered or encouraged their participation in focus group interviews. At the centre of this is the fact that the characteristics of both focus group participants and the researchers’ contribute to specific socially constructed focus group dynamics. For example, in conducting focus group interviews, researchers can encounter what Maynard-Tucker (2000) refers to as “difficult participants”. In her own words, “those participants are characterized as expert, too talkative, rambling, politically inclined, timid, intimidated and confused” (p. 403). It is the role of the facilitator to ensure that all these participants’ voices are heard and listened to during interviews. Similarly, how researchers present themselves in focus groups might hinder or facilitate productive discussions. In all, the study suggests positive relations between researchers and adolescents who participated in focus groups. This will be discussed below with a focus on languages used in the interviews, use of probing techniques, encouraging participation by all adolescents and raising relevant questions.

Many researchers believe that it is essential to open possibilities for participants to be active in the research process through the use of their languages (e.g. Chilisa & Preece, 2005; Culley et al., 2007; Hamza, 2004; Hennessy & Heary, 2005; Smith, 1999). Within this context, it was essential that adolescents communicate their knowledge and insights with language not being a barrier. Consequently, they were given the opportunity to use either Setswana or English or mix the two languages. The interview transcripts suggest that most adolescents mixed Setswana and English. In addition, as some team members explained in their reflections, some interview questions were explained in Setswana to facilitate active participation by adolescents. Adolescents were conversant on issues of adolescent sexual behaviours and HIV and AIDS and most of them shared them freely in these languages. Of significance too is that one team member who conducted a focus group interview in English only explained that she ensured that “the wording and the vocabulary was developmentally appropriate”. She further explained, “had I done the interview in Setswana it would have been hard to talk about sex and sexuality with kids the age of my grand-children. In my culture it is a taboo.”

Data from interview transcripts indicate that, as part of creating positive group dynamics, team members used various probing techniques. Moreover, the nature of probing used contributed positively to getting emic perspectives and thick descriptive data from adolescents. The probes prompted adolescents to further share their knowledge and insights on adolescent sexual behaviours and HIV and AIDS issues. Likewise the probes encouraged them to consider alternative perspectives to those shared by group members as well as to clarify their viewpoints. Examples of the probes used are: “I

want you to elaborate on that”, “what do you mean?”, “can you give us a different thought?”, and “you raised a very good point. Tell us more about it”.

The intention of the facilitators was to make adolescents aware that all of their views were important and appreciated. More than that, it was essential for them to share their opinions and perspectives on issues that touched on their realities and experiences in different ways. Researchers achieved this in part by encouraging all adolescents to participate actively in interviews. To illustrate, when in a mixed focus group interview, the moderator noticed that male students were not as actively engaged as females in the interview, she encouraged them by using phrases such: “guys say something”, “at the back there” and “let’s go back to you”. In a male only focus group, the facilitator encouraged participation by saying “let’s talk my friends, a problem shared is a problem solved”, “I want all of us to talk, please my dear friends. You all have very good ideas that we want”, “you are the only one who hasn’t said anything” and “you are still doing very well. Now you are seriously answering them, you are very serious”. Nonetheless, this is not to suggest that all adolescents responded positively to the probes that were utilized.

The nature of interview questions can contribute to successful interviews or can silence participants. Participants for instance, may decide not to respond to interview questions they view as sensitive. As part of the interview introduction team leaders informed students that they were aware that the issues to be explored were sensitive and adolescents could choose not to respond to some of the questions. To the contrary, evidence from interview transcripts indicated that most adolescents freely shared their knowledge and insights on adolescent sexual behaviours and HIV and AIDS issues. Again, none of the researchers’ indicated that adolescents resisted answering any questions because they felt that they were sensitive. In fact one researcher, in her response to whether she found any interview questions hard or challenging, explained that “the questions on sexual relations were a bit embarrassing at the beginning of the interview”. She attributes that to the following factor: “just the thought that at the same age (as the adolescents), it will have been difficult to respond to such questions. So, I kind of put them in my situation at their age that once you talk about such issues; it is from experience”. In response to the same question, some team members explained that there were no difficult or challenging questions. Instead, they were concerned by the repetitive nature of the questions, a phenomenon that contributed to lengthy interviews. One team member captures this view in her explanation that “I think that for focus group discussions to be successful, the questions should be limited and not be overloaded with such information. I felt that the students were losing interest as time went on since some questions asked were the same though worded differently. This was also frustrating for the researcher.” Of note too is that one team member identified a specific issue that she believed was challenging for some students. She explained that when adolescents were requested to suggest topics to be included in the intervention programme, they seemed to focus on parents rather than on adolescents.

### **Nature of Adolescent to Adolescent Interactions**

At the beginning of the interviews, the researchers informed the adolescents of the process to be followed in each interview in order to encourage honest, free, active participation by everyone. Among other things, they were encouraged to respect the knowledge and opinions of peers even if they disagreed with them. The evidence from interview transcripts and researchers’ reflections suggest that most adolescents respected and appreciated each other’s contributions. One team member summarizes this in her reflection that, “they encouraged others to participate. Some of them will encourage those who spoke with very low voices to speak loud and others would report what others were telling them to the facilitator/researcher”. Therefore, adolescents adhered to the group rules that were established.

### **Methodological Challenges**

In this section, we discuss the challenges team members encountered in conducting focus group interviews with adolescents in junior secondary schools. The following methodological challenges are the focus of this section: (a) silencing or marginalizing peers’ knowledge and perspectives, (b) insufficient time to complete interviews in the schedule time and (c) participants’ disclosures of personal experiences and experiences of others.

#### **Silencing or Marginalizing Peers’ Knowledge and Perspectives**

Participants in focus group interviews can interact with one another in different ways. In the process they may support or silence each other’s’ contributions. For example, they can make other participants embarrassed or frustrated by the manner in which they respond to their views. Consequently, they can make focus group interviews environment hostile for some participants to contribute in the production of research-based knowledge. One team member explained that adolescents “would giggle, or hackle as others talk, thus derailing them. ... As these take centre stage the rest became

spectators.” Another team member expressed that “they did not persuade the quiet ones to speak, actually there were those who dominated the discussions by responding to almost all of the questions.”

It is important to note that one team member expressed that unintentional silencing often occurred when adolescents failed to continue to support their perspectives when they were questioned or challenged by their peers. In her own words, “there were instances where they silenced each other but not intentionally. When they disagreed on issues others seem to let go easily”. All these examples clearly indicate that while it was essential to hear and listen to the voices of adolescents in the process of doing that, they also silenced each other. They acted against the spirit of respecting the viewpoints of everyone. In a way, this also reflect adolescents’ failure to adhere to the interview rules established at the beginning of the interview, which included respecting each others’ views. This suggests that there is often a contradiction between what is expected and what actually takes place in the socially constructed environment of focus group interviews. Team members as moderators of focus group interviews aimed at engaging all adolescents actively in interviews. Yet, some of the adolescents were reluctant to have their voices heard. Therefore, another form of silencing emerged when some of the adolescents who appeared ‘shy’ did not participate actively in the interview sessions despite being encouraged to do so on numerous occasions by team members.

### **Insufficient Time to Complete Interviews**

It is essential that researchers honour the times they negotiate with research participants with regard to the expected length of the focus group interviews. This was not always the case in the focus groups reported in this article. While the research protocols stated that each interview session would last sixty to ninety minutes, some interview sessions took over two and half hours, whereas some resulted in a second session being negotiated and subsequently conducted with the adolescents. Various factors contributed to these circumstances in the four junior secondary schools where focus groups were conducted.

In some schools researchers had to wait for focus group members to be convened and for suitable rooms to be identified for the interviews. In some instances, as one team member explained, researchers “had to go around looking for classrooms” and thereafter arranging them to suit a focus group interview atmosphere. In her words, “we had to arrange desks so that participants may be in a circle. It consumed time and thus we started even more late”. At times, there were not enough adolescents to form the required focus group on the basis of gender. Some of the adolescents who had agreed to participate in the study were not readily available and researchers had to wait for lengthy periods of time for them. Closely related to this is that, in some instances, assent forms were signed during the time scheduled for interviews. The forms were explained to adolescents and thereafter they had to read and sign them. Doing this task prior to all focus group interviews’ schedule times could save time.

Equally important is that adolescents often left while the interviews were in progress. Some had to attend to school related activities such as sports and cleaning classrooms. Some had to leave for home with parents who had arrived to pick them up or because they did not want to miss public transport to their various destinations. Likewise, team members explained that adolescents left because “their friends were leaving school”, “it was just time-up” and “it was late and some of them were going far.” These scenarios were complicated by two other factors. Firstly, some students did not turn up for the scheduled interview sessions because of school related commitments. Secondly, participants and team members were often disturbed by students and teachers who wished to dialogue with participants in particular, during the interviews. All these factors affected focus group interview dynamics negatively. Team members capture this phenomenon in the following manner:

“The researcher felt compelled to finish the interview as soon as possible”.

“The researcher would stop and attend to the needs of those who were leaving and the rest would be derailed and start conversing about other issues not related to the interview. It would take a few minutes to get those remaining settled”.

“We started getting less and less information especially when the talkative or ‘motivators’ left the group”.

While adolescents leaving during interviews was a challenge for researchers it could also be perceived as one way in which adolescents were exercising their right to voluntary participation. To them participation in the interviews was as important as participating in routine activities in their schools. It is also important to note two team members’ observations that the departure of some students contributed positively to focus group dynamics in that “in some cases as the size of the group decreased, the shy ones started talking” and that conducting second sessions of interviews benefitted adolescents and researchers because “students were much freer and communicated well”.

Some of the team members also felt that the interview guide was too long, with some questions being “repetitive and redundant”. This, in their opinion contributed to lengthy interviews which exceeded the time negotiated with the participants prior to conducting the interviews. Moreover, as two team members explained, this also impacted on the use of probing techniques, which in turn affected the depth of the data collected.

### **Participants’ Disclosures of Personal Experiences and Experiences of Others**

Culley, Hudson and Rapport (2007) rightly point out that in focus group interviews it is challenging for confidentiality to be guaranteed because researchers have “limited control over the process of disclosure” (p. 109). This stems from the fact that participants can share personal experiences as well as experiences of people they interact with, in ways that may compromise issues of confidentiality. This often happens even if researchers have informed participants that they should not personalize interview discussions (e.g. Culley et al., 2007). Of significance is that, researchers themselves often create possibilities for this to occur through the nature of interview questions they pursue. This phenomenon is evident from interview transcripts and fieldnotes from the study reported in this article. Although team members emphasized at the beginning of interviews in particular that focus group members should not directly share personal experiences or experiences of friends, classmates, or relatives, by posing the question, “is there anyone among you who has been raped by a relative?”, a team member invited personal responses from adolescents. One adolescent in the all girls group responded by stating that she was abused by a stepfather. In responding to that with the question “what did he do?”, the researcher further invited a personalized response. Consequently, the adolescent elaborated on her response by providing details of how her uncle tried to “sell her” to strange men and how her cousin came to her rescue. In another example from the same interview, an adolescent shared the details of an incident involving their neighbour (a primary school child) who was sexually abused by a relative. The experiences shared are sensitive although participants promised that they will not share them with anyone else, this is not guaranteed. As Lewis (1992) reminds us, “it is clearly more difficult, if not impossible, for the confidentiality of a child’s remarks to be respected if these are made in a group, rather than an individual interview” (p. 416).

### **DISCUSSION**

The previous section highlighted the methodological successes and challenges that emerged from using focus group interviews with adolescents in four junior secondary schools in Botswana. Data from the interviews, fieldnotes and researchers’ reflections suggest that the use of this qualitative data collection strategy opened possibilities for adolescents to share diverse knowledge, experiences and perspectives on sex, sexuality and HIV/AIDS. In all, focus group interviews that were grounded on the principles of the theory of planned behaviour (which informs the overall study) were used successfully to let adolescents share their own knowledge and viewpoints on issues of national concern that affect their lives in diverse ways. As a form of socially constructed research knowledge “in which multiple research participants simultaneously produce data on a specified issue” (Chilisa & Preece, 2005, p. 151), focus group interviews opened possibilities for adolescents to interrogate and reflect on the knowledge and perceptions of school-going adolescents regarding HIV and AIDS related issues through the framework of the theory of planned behaviour. This theory, among other things suggests that “behavioral, normative, and control beliefs are the sole determinants of an individual’s intention, which directly influence behaviors” (Hutchinson & Wood, 2007, p. 142) although these can be influenced by outside factors such as parents (Hutchinson & Wood, 2007). Indeed, an essential component of HIV and AIDS interventions in Botswana should consider the voices of adolescents such as the ones documented in this article.

Despite the challenges that researchers do encounter when using focus groups, as evident in this study as well as in the research literature (Bassett et al., 2008; Chilisa et al., 2005; Culley et al., 2007; Fox et al., 2007; Hennessy & Heary, 2005; Lewis, 1992; Maynard-Tucker, 2000; Montell, 1999; Morgan et al., 2002) we contend that focus group interviews conducted with adolescents can be used to promote social change. This is important considering that one of the main intentions of the larger four phased on-going study from which the data reported in this data is drawn, is “to design family/school interventions’ that are age and culturally appropriate for the focus group and to test if the interventions have produced short term and long term effects”. While this paper acknowledges that interventions are complex and multifaceted, the importance of adolescents’ voices on HIV and AIDS related issues is indeed relevant for providing culturally appropriate and acceptable interventions for them. By inviting adolescents to share their knowledge and insights for purposes of developing appropriate interventions, they were being empowered to make decisions about issues that affect them. In turn, adolescents responded by showing commitment to social change by sharing possible intervention strategies that are appropriate for adolescents in Botswana. In our view, the strategies they suggested are worthwhile and should be given the attention they deserve. All this shows, as Smith (1999) rightly points out that, “research is not an

innocent or distant academic exercise but an activity that has something at stake that occurs in a set of political and social conditions” (p. 5).

The data from interview transcripts, fieldnotes and researchers’ responses to reflective questions provided opportunities for researchers to rethink and problematize ways in which they conceptualize and utilize focus group interviews in research-based knowledge with adolescents in particular. In this manner it provided possibilities for identifying the challenges and successes of using focus groups with junior secondary school learners. Although the intention is not to generalize the findings of this study, the research reported in this article illustrates that focus group interviews can be used successfully to dialogue with Botswana adolescents on adolescent sexual behaviours and HIV and AIDS issues. In the process, focus group interviews contributed to diverse group dynamics between researchers and participants as well as among the participants. Hence, the researchers’ decisions to use both single sex and mixed gender focus groups such as in the study referred to in this paper. Gender is often an important factor in terms of the nature of participation that emerges from focus groups (e.g. Chilisa et al., 2005). Of significance is that gender did not hinder the participation of adolescents in mixed gender focus groups. Adolescents in these groups freely shared their knowledge and insights without being intimidated by members of the opposite sex.

As Behar (1996) reminds us that researchers as well as individuals they observe or interview are vulnerable. Hence, the need for researchers’ to evaluate their participation in focus group interviews as well as that of the participants. Various factors, including researchers’ multiple identities can contribute to the vulnerability of both the researchers and the participants in interview sessions. This is reminiscent of Bogdan and Biklen’s (1998) view that for researchers “acknowledging that no matter how much you try you cannot divorce your research and writing from your past experience, who you are, and what you believe” (p. 34) is essential. For example, researchers, such as in the study reported in this article, may be worried that the sensitivity of the topic would hinder responses from participants. Or they may be concerned about asking questions that they deem embarrassing.

## CONCLUSIONS AND IMPLICATIONS

Although significant research has been done on HIV/AIDS related issues in educational settings in Botswana, (e.g. Bennell et al., 2001; Chilisa et al., 2005) much has not been done in terms of problematizing the research methodologies used by researchers. Interrogating research methodologies, among other things is about recognizing the ‘messiness’ of research (e.g. Ortlipp, 2008) recognizing research as a site of struggle (e.g. Bishop, 2005; Smith, 1999, 2005) as well as identifying relevant data collection strategies for the targeted participants such as adolescents in this country and in the process challenging processes, practices/actions and ways of knowing and knowledge construction that may be taken for granted. This has implications for developing an informed and educated Botswana nation (Presidential Task Group For a Long Term Vision for Botswana, 1997). It is our hope that this paper will contribute to dialogue on research methodologies in the area of HIV and AIDS research in Botswana as well as on relevant data collections strategies for use with adolescents in Botswana in particular. Although the intention of this paper is not to make generalizations about the use of focus group interviews within the Botswana context, the findings reported in this paper have implications for developing and promoting culturally sensitive research approaches relevant to this country/society.

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