"Africa’s Migration Brain Drain: the Costs and Benefits to the Continent,"

Amadu Jacky Kaba, Seton Hall University

Available at: https://works.bepress.com/amadu_kaba/30/
The Chimera, monster of Greek mythology, part lion, part goat, and part dragon, is a symbol for fantastic ideas and “the creation of imagination.”

<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Glocalization – A Challenge</td>
<td>By Dr. Teboho Moja</td>
</tr>
<tr>
<td></td>
<td>for Curriculum Responsiveness</td>
<td>The Steinhardt School of Education at New York University</td>
</tr>
<tr>
<td>19</td>
<td>Africa’s Migration Brain Drain: The Costs and Benefits to the Continent</td>
<td>Dr. Amadu Jacky Kaba State University of New York at Binghamton</td>
</tr>
<tr>
<td>31</td>
<td>Teaching with Technology Across the Curriculum: Making the Case for Countries in Africa</td>
<td>Dr. Kwabena Dei Ofori-Attah Cumberland College</td>
</tr>
<tr>
<td>43</td>
<td>Public Private Partnerships (PPP) For Economic Development: A Case Study of Botswana Development Corporation (BDC) Limited</td>
<td>Dr. N.S. Bonu University of Botswana, Gaborone</td>
</tr>
</tbody>
</table>
Publisher’s Note

It is with great pleasure that I welcome you to the Fall/Winter issue of Chimera. As the USA/Africa Institute marks significant changes in global affairs since the publication began, we have assembled articles in this issue that speak to the basic economics of Africa. Sub-Saharan Africa has a population of over 682 million. This represents tremendous potential both in terms of African and global development. Developing this potential will require us to look both in and out of the continent for resources and take into account local needs and global dynamics.

Members of the African Diaspora are thriving in most nations of the world and have remarkable abilities. Creating a framework for constructive engagement will be critical.

Dr. Teboho Moja begins this issue with a comprehensive review of curriculum development in South Africa as the basis of a continent wide model in higher education. Drawing on existing studies, Dr. Moja prescribes a method of developing education in Africa to meet local needs while preparing a workforce for global competition. It forces us to consider whether African students in the lower levels are being adequately prepared to be successful later in undergraduate and graduate programs.

For those who have left the continent and those who remain, Dr. Amadu Jacky Kaba provides some startling insights into the costs and benefits of emigration to Africa. He reveals an invisible nation of over 151 million individuals of African descent in the western hemisphere alone, representing significant political and economic power. This is certainly a resource for development in Africa that needs to be developed and that can inform the process of development from a global prospective.

Dr. Kwabena Dei Ofori-Attah makes a strong case for distance learning programs. We note the value to creating education systems that are transferable on the global scale, allowing students in Africa to earn degrees without leaving the continent, and preparing students, children as well as adults, to meet the social and economic needs of their states, continent and world.

We close with a case study of the Botswana Development Corporation, by Dr. N.S. Bonu that shows how public private partnerships have worked in Africa to create value and economic development. He also makes some astute observations of how the market forces shape private sector participation and how Africa can use this model to develop local investment.

These dialogues will be of particular importance to organizations such as the African Union and NEPAD as they seek to develop policy for a new Africa. It is our hope that the necessary discussions take place on a global scale and that we start to recognize the economic value and opportunities presented in the 21st Century by Africa.
Introduction

A decade after the transformation to a democratic government is an opportune time to review what has been achieved in higher education as a result of the direct and indirect influence of current policies that were instituted with the intent of transforming the higher education system in South Africa in order to make it more responsive to the needs of society. In the mid 90’s the National Commission on Higher Education (NCHE) presented a framework that informed new policies adopted by government. Later the Department of Education released the Education White Paper 3, the Higher Education Act of 1997 was passed, and a National Plan on Higher Education (NPHE) was developed. These laws, policies, and papers were intended to ensure that higher education play a positive and constructive role in the reconstruction and development of South African society. The White Paper presented policies intended to address both local and global concerns, i.e., the need to be competitive in the global economy while at the same time meeting local development and reconstruction needs. The expectation was that Higher Education could integrate those needs in its curriculum and thus meet the challenge of making Higher Ed an important tool in meeting the demands of a fast changing social order. The White Paper outlined the local needs and challenges of addressing past inequities so that Higher Ed could serve the needs of that new social order by responding to national needs as well as to new realities and opportunities (White Paper 1.1). The global challenge of a new economy is the need for human resource development that includes lifelong learning, high-level skills training, and knowledge production, acquisition, and application (White Paper 1.12).
The framework provided by government has guided transformation at the system level, institutional level, and at an instruction level. The case studies presented in this project serve as examples of work done at an institutional level; management promoted efforts to ensure that curriculum transformation was responsive to the needs of learners and the nation and work done in the classrooms by the researchers who wrote the case studies. The focus is curriculum responsiveness at an institutional level. Policy documents did not provide direct guidance as to how curriculum needed to be transformed to make it responsive to the new needs but the proposed changes had direct implications on how curriculum needed to become responsive. The policy documents presented a responsive context that was meant to enable curricula to become responsive to the needs of society.

It is important to understand the context that framed the recommendations that were made and the new policies that were adopted. The debates that framed that context seemed to be in contest with one another, but I would like to argue that they actually complimented each other. The concept of glocalisation is introduced in the debate as a way of integrating what appears to be contesting views and that this integration can be used for effective reforms. There are efforts in various sectors world wide to integrate local challenges with global challenges. This paper is informed by the debates on the Africanization of higher education in South Africa and the vast literature on globalization and the challenges it poses for higher education systems world wide. Those debates and the vast literature on the issues influenced policy for a transformed higher education system in South Africa. I also draw from the work of other researchers who have examined curricula responsiveness in South Africa. Case studies are but one element in the formulation of new policies, but they are critical because they take place in the classroom. Responsiveness at this level takes a discourse that is more in response to the needs of the learners, whom the researchers work with, and are in direct contact with, rather than the policy makers. Researchers at the classroom level indirectly respond and contribute to the needs of the broader society.

I also look at how responsive curricula has been to some of the challenges outlined in the policy documents even though these documents did not prescribe how curricula should be reformed. To do that I have relied on the copies of written reports by researchers, participation in a workshop consisting of case studies researchers and an extended audience from higher education institutions, and participating as a panel at a conference on curriculum organized by the Department of Education.

**Africanization Debate and the South African Context**

To examine how responsive curriculum has been in South Africa, one needs to understand the broader context within which we operate. South Africa's isolation from other countries on the continent has to be addressed as part of educational reforms. There was a challenge for post apartheid transformation efforts in the higher education system in South Africa to ensure that the system plays its role in development and

“There are efforts in various sectors world wide to integrate local challenges with global challenges.”

“In order to position South Africa to operate successfully in a global economy, it was necessary to transform its system of higher education to be responsive to globalization realities.”
positions the country to take its place on the continent as well as in the world. It was widely accepted that the system needed to be strengthened in order to deliver a public good that had an economic benefit. In order to position South Africa to operate successfully in a global economy, it was necessary to transform its system of higher education to be responsive to globalization realities. Responsiveness to global challenges has wrongly been interpreted, by some proponents of the Africanization debates to mean meeting global needs at the expense of local needs. I would argue that being responsive to global challenges does not necessitate serving global needs at the exclusion of local needs. For example, one major local post-apartheid need is the creation of an equitable society based on democratic values. To meet that need requires an increase in the participation rates of those eligible and a gross expansion of the system to include those who were previously excluded. In doing so, a global need for the production of greater numbers of highly skilled human resources could be met at the same time. Such a policy responds to both local and global challenges and indicates the interaction between global and local needs.

Debates on the transformation of higher education in the mid-nineties often polarized global and local issues, yet they are not necessarily contradictory and can be complementary. The NCHE located the arguments and debate for higher education transformation within the broader challenges posed by globalization on higher education systems and how reforms needed to ensure that higher education systems address those challenges. The goal was not to serve external needs, but to prepare human resources that would make the country a partner in the global world. That was a local need for South Africa. These arguments were presented with the understanding that in addition to responding to local needs, there is an additional need to prepare the country for participation in a global economy. In policy documents Africanization was not approached from an epistemological point of view in terms of the inclusion of an African body of knowledge into the curriculum or the use of an African philosophy in teaching and learning, but rather from a view that South Africa as a country on the continent needed to be positioned in such a way that it would be a force to reckon with. The 1997 White Paper and other policy documents also express the importance of addressing local, regional, and national needs of South African society as well as those of the African continent.

It was during the same period that black intellectuals located within the higher education institutions and who were proponents of the Africanization debate argued for the Africanization of the higher education system and criticized the NCHE report for not addressing this issue. The debates flooded Sunday newspapers during the policy formulation period. The Africanization debate was long overdue in South Africa as it had happened elsewhere in Africa. Attendees at the Madagascar 1962 University Leaders’ Conference debated the Africanization of universities, the role of the African university and concluded that higher education institutions should be key agents for development (Saywerr, 2002). A decade later, the same debate was further advanced at the seminar on “Creating the African University” held in Accra in 1972 and affirmed the role of the development of an African identity.

The debate on Africanization in higher education institutions in South Africa initially focused on symbolic changes such as the transfer and
sharing of power by changing racial representation in all spheres of the institutions. The debate gradually shifted to more substantial issues that included curriculum offerings. Issues of identity and culture were raised and arguments for the use of an African philosophy and thought in curriculum surfaced, as well as arguments that curriculum has to play a central role in the Africanization process. This clearly marked a shift in the debates from a mere change of the complexion of the inhabitants of the institutions to changing the historically Eurocentric curriculum; in essence changing the very way in which teaching and learning are done and changing evaluation processes and assessment criteria. The debate has now gone even further in an attempt to allow for the interaction of both local and global considerations. For example, at the “Conference on Higher Education Curriculum and Society” organized by the Department of Education, keynote speakers such as Makgoba, not only made a case for the need for an indigenous African epistemology and African scholarship but went further to state that meeting the local need was not exclusive of the need to meet a global challenge of producing graduates with expertise to operate in the global environment.

There is continuing friction in the discussion of local versus global needs. The ABS business school case study is a good example of the tension between the global and local needs and how that tension is mediated through the programmes offered. The old Master of Business Administration (MBA) program in the case study is retained to meet the global challenges of producing global managers and remains similar to other programs that it had been modeled on. As a way of responding to local needs, the business school opted for an expansion to include a course that directly responds to the political, social and economic needs of South Africa. Another response has been the design of a new program parallel to the existing programme – the Executive Master of Business Administration (EMBA) which attracts new kinds of students, mainly young black middle managers. A problem with this mode of response is the issue of non-transferability or low transfer rates. The challenge is in combining the two without developing new silos side by side to train local or global managers.

The debate world-wide on the transformation of higher education has shifted from a narrow focus on local needs to a wider focus on positioning higher education to be responsive to the challenges of a global knowledge intensive economy and to ensure that higher education contributes to the development of a knowledge society. The first UNESCO world conference on higher education in 1998 addressed the issue and highlighted the need for such reforms. The World Bank report (Salmi, 2002) on constructing knowledge societies, argued that higher education has a critical role to play in developing a country’s competitive advantage in the global economy. It further raised issues relating to how developing and transition countries need to position themselves to take full advantage of the potential contribution of higher education. There is great concern that Africa as a continent has been left out of the globalization process (Giddens 2002) and the question is whether higher education systems in Africa are in a position to help their African countries become part of that process. In an overview of Africa’s recent economic evolution, Castells (1996) argues that “the dynamics of social exclusion of a significant proportion of the population as a result of new forms of inclusion of countries in the global economy operates on a large scale in the case of Africa – being a major part of the ‘Fourth World’”.

(14) He continues to state that the “systematic logic of the new global...”
economy does not have much of a role for the majority of the African population in the newest international division of labor” (p.15). Taking into consideration these issues, it then becomes clearer why higher education reforms in South Africa must integrate both Africanization and globalization in tackling its response to curriculum reform. South Africa is challenged by old issues that most countries in Africa and other developing countries face, such as its historical past and emerging issues in a globalization world. The challenge therefore is not only to construct an equitable society but also a knowledge society. Knowledge and equity are the context within which curriculum reforms must respond to.

There is a dearth of literature addressing issues that are particularly unique to the African continent. A scan of the limited current literature on higher education in Africa raises issues that are not uniquely African but are similar to other developing countries (AAU Conference papers 1999). Other literature available is more country specific, such as publications from CHET and other similar African organizations. Most of the literature that focused specifically on the African context and its specific issues was produced in the 60’s and 70’s and addressed the issues of Africanization of the curriculum post colonialism. The post colonialism debate has been important for South Africa. However, instead of addressing post-colonialism curriculum issues separately the way other African countries have, South Africa can integrate post colonialism with Africanization into a tension referred to as glocalisation.

Glocalisation is used in this paper as a way of integrating local and global issues in order to be responsive to the needs of the South African society. The concept is used first as a way of addressing contending points of view – explaining the tension between local and global perspectives and the debates that ensue. In South Africa the tension is comprised of the NCHE members’ concern for responsiveness to global pressures and the proponents of Africanization. Second, as a way of indicating that the contending views are not necessarily in tension with one another but rather need to be understood as interacting with each other. There is a view that the local contains much that is global whilst the global is increasingly penetrated and influenced by the local. As the concept emerges in literature, a partnership between the World Bank Institute and a Think Tank on Glocalization has been formed and charged with the responsibility to generate a thought process on the concept and to translate the principles into policy trends.¹

There is a renewed interest in higher education institutions of countries in the North that feel their curriculum contains too much local content and therefore needs to integrate global issues by internationalizing their curriculum in recognition of the fact that the graduates they produce will work in a global setting. There are arguments that effective participation in global environment requires strong national states. Can the same arguments be made about the need to Africanize as a pre-requisite to participating internationally and in the global setting? I would argue that the process is not linear and that we in Africa need to integrate the two processes as we reform our systems. Another question is whether the curriculum in South Africa contains too much content from outside the Continent and needs to be balanced by integrating local content into the global content. This is probably true of many courses offered in other higher education institutions, given the long history of colonialism and decades of apartheid, and makes the consideration of curriculum reform necessary. The case studies in this project address multiple topics and issues but need to keep particularly in mind the need to prepare students to live and work in local settings that are influenced by global as well as local considerations.

**Globalization Pressures and Challenges in the South African Context**

There are various definitions of globalization. The concept has become a major subject of study with numerous books written by scholars from a broad range of disciplines. It is not my intention to discuss what globalization is or is not, but rather to look at how the discussions on globalization impacted the policy framework developed in South Africa. I use the concept ad
defined by Giddens which refer to the intensification of worldwide social relations which link distant localities in such a way that local conditions are shaped by events occurring many miles away and vice versa\textsuperscript{2} (Giddens, 1990). Globalization creates an ever increasing inter-dependence between countries and thus societies are more inter-dependent with others across the world than at any previous time. This is a reality that must be accepted and must inform all policy making. South Africa emerged from years of isolation and had no choice but to reposition itself in a world that had become interlinked and interdependent. A tool countries use to position themselves globally is their higher education systems. These institutions are under pressure to be engines of development in economies that are knowledge intensive and challenged to meet both local and global demands.

Governments and higher education leadership worldwide have embarked on major reforms of their systems and institutions. The rationale is to position higher education to play its role in the new global economy. Castells (2001) defines the global economy in terms of three major characteristics:

- First, an economy in which productivity and competitiveness depends on knowledge and information.
- Second, an economy where local jobs are influenced by the global core of the economy.

- Third, an economy that requires a technology infrastructure, organizational capacity and strong institutions.

It is mainly in the first and the third area that higher education has a role to play.

Castells (2001) further asserts that one negative manifestation of the new economy in the developing world is the devaluation of labor, which creates three interrelated heavily populated economic sectors; the informal sector, the survival sector, and the criminal sector. He argues that the criminal economy is the fastest growing economic sector in the world. South Africa has large numbers of people in all three of these sectors. The question is whether a responsive curriculum can effectively address these issues. Can curriculum be reformed to provide survival skills (the very skills denied them by apartheid) for masses of people displaced by technology and an economy that

\textbf{“Globalization creates an ever increasing inter-dependence between countries and thus societies are more inter-dependent with others across the world than at any previous time.”}
now has no use for their current low level skills? What other issues should a socially responsible curriculum address and how should these choices be prioritized?

One result of globalization is that due to the devaluation of labor there is likely to be a new clientele for higher education products. In South Africa we have large numbers of people who have lost jobs due to economic restructuring and have little expectations of returning to their former occupations. I do not mean to imply that all efforts to reform curriculum should attempt to solve these problems, but it is important to identify areas where global policy frameworks are needed to guide curriculum reforms. There is, for example, a clear need for adult education training and specialized mid-career training. Is higher education curriculum responsive to emerging needs, new student choices, and labor market demands? The curriculum responsiveness project documented case studies of curriculum responsiveness in order to “illustrate different forms of ‘responsiveness’.” Its focus was at the classroom level in order to show that changes in society can be effected at different levels of the education system. The goal of the project was to provide policy makers with educational data gathered at the classroom level. The business school case study by Rob Moore is another example of this “grassroots” approach: The program it studied is meant to address the needs of specialized mid-career training as well as those of an emerging black middle manager class; both examples are representative of the new expectation that higher education be able to offer the citizenry the opportunity to learn new skills needed to survive in the new economy. The University of Natal (Pietermaritzburg) case study details another higher education program tailored to address the needs of a non-traditional clientele in need of upgrading their skills. I would argue that these programs and others like them are examples of “glocalization” – policies that have been specifically designed to meet both local and global societal needs.

Another effect of globalization is the emergence of a learning society; i.e., a society that is ready to learn and demands opportunities to learn. Other curriculums need to be responsive to these new needs. How can we best assure that this is the case? For example, do case studies on teaching thinking skills, such as the one at the University of KwaZulu-Natal, provide useful data? At the time that some of the education reform policies now in effect were formulated, there were already clear signs that South Africa was moving in the direction of a global economy, as evidenced by the rapid decrease in demand for low level skills and an increase in demand for high level skills (NCHE Discussion Document 1995, p.31). We need to continue to study the curriculum reforms implemented in response to these trends and to redouble efforts to formulate new responsive and effective higher education policy.

Often in discussions of reforms it is mentioned that there is a need for higher education to contribute to the development of a labor force with high level skills, but there is very little information or explanation as to what those high level skills are. Some literature has emerged that attempts to explain this skilled labor as having highly specialized capacity (own emphasis) to generate and regenerate information in what it does (2001, p.196). Some of the particular skills mentioned are those needed for participation in a high technology environment; skills needed to adapt to an unpredictable and volatile global product market, to anticipate flaws in production, to become life-long learners, to retool; and to function in multiple ways. It is interesting that...
there is less emphasis on providing skills for social development but more emphasis on skills that will promote economic development for a global market economy. The NCHE policy debates informed by international debates on similar issues made recommendations that would steer the system towards producing high level skills and for a high growth path of economic development. As a result, the NCHE produced a framework for meeting the challenges of globalization and a knowledge society to guide reforms in South Africa.

Another challenge for higher education is that the new economy requires the acquisition of broad, generic and transferable skills. Emphasis is put on skill portability and learning power, and indication that there would be career changes or job specification changes that include an interaction between the local and global high technology work environments to meet local and global needs. The implication is that higher education institutions need to prepare workers for unpredictable career paths and changes in employment patterns (NCHE Discussion Document, p.29). Other high level skills mentioned are skills needed to adapt a volatile global product market. In such a market, problem-solving skills to anticipate flaws in production, to become life-long learners and to retool, are necessary.

A challenge faced by higher education institutions is that of having to contribute to the process of innovation on which competitiveness depends. Should a responsive curriculum address such issues and if so, how? A study conducted by the University of Kwa-Zulu-Natal (Pietermaritzburg) details the efforts made at developing critical reasoning skills required in the new economy. International competitiveness depends on a country’s capacity to access knowledge and expertise, use it, reconfigure it, and even sell it. Pavitt, as quoted in Gibbons (1998, p.72) states that even if ideas, methods and techniques are produced globally, the innovation process for the development of new products and processes usually takes place locally. This has implications for a responsive curriculum to prepare human capital that can participate in a process of innovation.

The NCHE policy framework took into consideration the need to redress past inequalities in higher education and the broader society but emphasized providing guidance for South Africa’s preparation to participate in a global economy. Suggestions of redress of past inequalities, such as limited access, included the dual demand for expansion and growth in a system to accommodate learners who were previously excluded. The expectation was that such an expansion would provide an increase of highly skilled labor to the new economy. Examples of case studies that make a contribution in this area are from the School of Psychology at the University of Kwa-Zulu-Natal-Durban and the undergraduate science program at the University of the Western Cape. An area that seems not to have received much attention is access for non-traditional students and the reform of curricula to respond to their needs. A transformed higher education system was expected to be accessible to new kinds of learners, provide new skills and re-skill those where already skilled. A large scale study on how responsive the curriculum has been since those recommendations were made would need to look at how curriculum responses have addressed those issues.

The policy framework aimed at making South Africa competitive by strengthening its system of higher education in order to deliver a public good that had an economic benefit. This goal had taken into consideration global needs that included demands for development and the creation of a more equitable society. It was in this context that higher education was to play a role as an agent of social change and mobility. These recommendations were systemic but had implications for recommendations for the curriculum to be reformed in order to be more responsive to new needs. The selection of case studies for the study includes those that have reformed their curriculum to cater to the needs of an anticipated new clientele; those in the past who would have been excluded from higher education.

The reforms in South Africa are in response to global pressures and challenges. As South Africa locates itself in the network of global exchanges and interactions, higher education will have to play a role in the production of high level skills and technological...
innovations necessary for successful economic participation in the global market (Moja and Cloete 1996, p.3).

**Being Responsive in a Responsive Context – A Policy Framework**

An important consideration in the debate about the responsiveness of curriculum is the degree of responsiveness of the context itself. I would argue that the South African context is responsive in two ways. First, higher education in South Africa changed and became responsive to the needs of a new economy, society and political system. Policy debates over economic policies highlighted the need to address both needs of development and equity (NCHE 1996, p.53-56). The changing context was a factor that contributed to a need for higher education institutions to play a key role as agents of social change and mobility by promoting equity both within higher education and the broader society (Moja, T. and Cloete, N. 1996).

Second, the context, by informing a policy framework for transformation, produced numerous policy documents, publications, debates and information to guide reforms. A very broad policy framework that we described as too sophisticated for implementation by international higher education experts was provided by government to guide reforms. There were not direct recommendations for curriculum but reforms were implied in the recommendations and policy statements. For example, the report of the National Commission on Higher Education (NCHE), states that “new research agendas and new learning programs will be needed to mobilize the culture, social and economic potential of the country and its entire people” (1996, p.3). Those policy recommendations had implications for curriculum reform without making specific recommendations on curriculum change. Ensor (2003) states that lack of direct guidelines “gave rise to ambiguity and widely divergent readings of its policy text.” Criticisms, then and now, most recently at the workshop discussing the case studies, are that the framework was not specific enough for researchers in institutions to know what to do in making their curricula more responsive. There are different views on the degree of specificity needed to ensure change in policy documents to allow for flexibility and creativity in implementation. The guidelines for curriculum reform are provided throughout the report by the NCHE report (1996) and the NCHE discussion document (1997) and Ensor (2002), in her work, provides yet more specific suggestions for both curriculum and policy framework:

- A shift from courses to credits
- A shift from departments to programs
- A shift from subject based to learner centered teaching
- Changes in institutional arrangements
- Redefinitions of institutional missions
- Flexible approaches to curriculum
- Restructuring qualifications for multiple entry, exit and re-entry points
- Flexibility to allow interface between work and study and multiple sites of learning
- Teaching of marketable skills
- Recognition of prior learning

The points above could serve as a starting point in assessing the degree to which curricula has been responsive to the needs of South Africa based on the expectations outlined in the policy documents. Any study on curriculum responsiveness needs to provide a clear understanding of what “curriculum responsiveness” means. The absence of a clear definition suggests a lack of well developed theory on curriculum responsiveness. Another issue is that of the underlying values in the reforms under discussion. The latter issue is addressed by Kopano Ratele in his paper and identifies a need for utilizing different responsive approaches according to the situation. Ian Moll, as one of the researchers in this study, addresses the former issue and presents an analysis which hopefully will contribute to the development of curriculum responsiveness a theory.

The case studies make little effort to address the needs of the country as opposed to the needs of the learners. There is an assumption that the audience has a common understanding of what is mean by a responsive curriculum so the scope is broadened to include everything. Systemic
responsiveness in the proposed framework for transformation by the NCHE defined a responsive system of higher education as one that meets the social, cultural, political and economic needs of its environment and has the ability to adapt as these needs change. It went on to say that higher education institutions need to take seriously the challenges presented by the South African societal context and the challenge of developing and modernizing the country. The expectation is that responsiveness would be reflected in institutional programmes, designed at all levels of higher education. In what could be interpreted as an example of responsiveness to the need to re-organize administration, a case is being for the rethinking of the role of middle management and the role in institutions by researchers based at the Cape Technikon and the University of the Western Cape as well as the study by Rob Moore. Expectations were that there should be a shift from discipline-based education to more open systems that are interactive; there would be increased diversity of population, mixed programmes, and skills for inter-disciplinary cooperation. Responsiveness entails greater accountability to colleagues and the broader society (NCHE 1996, p.79). The NCHE also warned against responsiveness that could be characterized as a mere reaction to short term or immediate problems. Are there cases beyond those in the study that have met those expectations?

### The Discourse of Responsiveness

The policy framework as discussed above provides guidelines of what was anticipated at various levels of the system in responding to the new challenges facing South Africa. The guidelines provided directed at the institutional level. The presented case studies, however, operate largely at the classroom level, although some do address institutional issues such as the role of middle management in curriculum reform. The issues here are how policy has been implemented at the class room level and how that work relates to national goals for development. A question to be considered is to what degree curriculum that is directly responsive to the needs of the learners can be said to be responsive to the needs of society at large?

Answering these questions is difficult because curriculum reform issues were not directly addressed within the broad policy framework but were implied in the anticipated changes. The assumption was that some of those changes would have a direct impact on the curriculum. Although particular goals that are to be met through a responsive curriculum were left vague, it is clear that some expected curriculum reforms in South Africa to favor the social reconstructionist approach (SRA). The need to ensure that higher education is responsive to the needs of society has caused this approach to dominate policy discussions. Theorists who support this approach argue that education has to play a role in creating a new social order and that education should help prepare students to transform their world for the benefit of all (Freedman 1998, p.42). The role of higher education in the White paper is expressed as that of reconstruction and development, and more recent studies have further espoused this theory of higher education. Looking closely at the case studies for this project, it is clear that they are based on multiple approaches to curriculum design and contain elements that reflect the SRA. For example, I would argue that the ABS Business School Case Study reflects this view because it attempts to both respond to the market and societal needs. The curriculum also uses learning processes that involve group activities that extend beyond the institution and the expectation is that students would interact with peers and their community (community broadly defined). These elements are typical of social reconstructionist approaches (ibid, 42-43).
A number of studies, for example, those done by Ensor 2002 and the policy debates organized by CHET (1997) reiterate the notion of curriculum responsiveness as set forth by the SRA:

- Policy papers anticipated that there would be more inter institutional transfers and that credits earned through modules would be transferable. The conclusion was that portability has not been achieved, as was assumed in the policy papers, and therefore there is less flexibility in the way the curriculum has been reformed. These policy expectations are not directly addressed in the case studies because the broader issue of organizing learning into portable modules is an institutional one and not an issue for classroom instruction.

- There was an expectation that courses and programmes would be reorganized and that learning would be organized across disciplines and institutions. The conclusion was that this was only partially achieved. It is hard to assess the level of inter disciplinary work though individual case studies. There are inter-disciplinary elements in the work presented by Holtman and Marshall as well as in the case study presented by Ramani and Joseph.

- Reorganization of learning material was expected to produce more coherent classroom study plans. The conclusion was that there are still questions as to how to achieve coherence; for example, should the emphasis be on vertical coherence to be achieved through disciplines, or horizontal coherence, to be achieved through student choice of courses. Ensor concludes that the reorganization of the curriculum into one or two vertical subject sequences resembles the old single or double major bachelor’s degrees. Using that as a reference point, the Ramani and Joseph case study would fit that mode in its recommendation to make learning programs responsive to the needs of a multilingual and multicultural society.

- Another conclusion is that curriculum responsiveness has been achieved through course revisions, repackaging and renaming. The ABS Business School case study presented a model that did not necessarily repackage and rename a programme, but opted to add-on rather than fundamentally change the curriculum to become a glocal. The changes described through these case studies appear to be directed towards developing new programs that are responsive to the needs of an emerging economy. It is not clear as to whether the programme proposes a fundamental shift to prepare learners for a changing work environment. The focus of the programme on individuals and personal development leads me to conclude that there is indeed an effort to help learners be adaptable to new situations. The reforms in this case study clearly address not only the need to provide skills to people who were previously excluded but has also identified the need to create a curriculum that meets both local and global needs.

There are instances where responsiveness has been achieved through revisions, renaming and repacking of existing courses, and that is effective if those courses become responsive to the needs of learners and the broader society. Ensor argues that responsiveness in some instances has been due to a need for survival as a result of budget cuts and mergers. The same argument advanced above applies in some of the other case studies and I would agree that responses to other pressures had little to do with policy implementation but rather by default, which addressed some of the issues that were raised in policy debates. The reforms implemented were a result of new and unanticipated needs in higher education.

It is on the basis of such changes that I conclude that there is indeed been a substantial discourse on responsiveness. There have been important reforms, but not necessarily changes that were directly anticipated in policy formulation. For example, there were expectations that higher education institutions would experience financial constraints, and it was anticipated that these constraints would be so severe that in some instances institutions would become bankrupt. Some restructuring occurred, not due to policy frameworks or policy discourse, but
simply as a market response to a drop in enrollment. The outcome is not a surprise given the fact that policy only provided a framework that allowed for some flexibility and creativity in being responsive.

There is evidence of responsiveness to learners’ educational needs in the case studies. The case study of Holtman and Marshall presents two examples of curriculum responsiveness to academic underpreparedness by the faculty of Science at the University of the Western Cape. It highlights the gap between the content deficit which students bring to class and the epistemological belief of those students. The case presents an example of responsiveness to understanding ways in which issues of inequity are to be addressed in an attempt to build capacity in the science fields. The National Plan for Higher Education (NPHE) lists capacity building in the sciences as one area that could contribute to meeting the need for knowledge as well as the need for human resources in a transforming South Africa to help the country to operate in a globalizing world.

Another case study that serves as an example of a curriculum that is responsive to the educational needs of students is the Steinberg and Slonimsky case study at the University of the Witwatersrand. The study analyzes students’ work in order to understand how learning takes place and what support resources are needed to ensure that it does so via delivery mode that combines both contact and distant learning. The policy documents called for new modes of delivering higher education to those who could not access it in the past. Many institutions seized the opportunity to expand their enrollments by increasing access and combining distance education with contact education. However, little has been done to research the learning that is occurring under these circumstances. The Brodie and Long case study advances an understanding of the integration of learner’s ideas with disciplinary content in learning mathematics and mathematics pedagogy. The policy documents called for more students to learn science, mathematics and technology.

There are a number of case studies that document responsiveness that focus on researchers’ disciplines rather than programmes or interdisciplinary work; for example, the Ramani and Joseph case study on a bilingual degree and Bradbury’s case study at the University of KwaZulu-Natal. The first study responds to the need to prepare students for a multilingual society. A democratic South Africa now acknowledges that its multilingual and multicultural heritage needs to be supported through a reformed curriculum. The set goals are achievable within the discipline and do not necessarily depend on a reorganization of the learning material into an interdisciplinary program. Ensor (2002) developed a typology that indicates how curriculum gets re-packaged in a disciplinary discourse to responsiveness. The case study by Ramani and Joseph is an example of a type of vertical discourse with two majors that resemble the old one or two major programmes. The second study is discipline based and addresses the issue of access to higher education and the degree of success achieved by the new higher educational consumers. Broader access to higher education is regarded as a key reform in the effort to redress past inequalities caused by apartheid.
The research on success was necessitated by the high failure rates of this new student population. This issue was raised by former Minister of Education Kader Asmal.

The case study by Spurrett at KwaZulu-Natal is an example of curriculum responsiveness to skills training – thinking skills – essential for the human resources produced in higher education. Another case study that addresses the issue of skills is the ABS business school case study. These policy papers call for an emphasis on skills development. The skills referred to are generic and can be flexible to the employment needed of the new economy.

There are two areas of curriculum responsiveness that have received little attention: community and cultural. An argument can be made that the debate for Africanization has itself been a call for cultural responsiveness. A curriculum that is culturally responsive capitalizes on students’ cultural backgrounds and integrating them rather than bypassing or negating them. The case study on bilingual teaching at the University of the North integrates the learners’ cultural experience with new experiences and develops in the learner the use of language as a tool for rational thought.

Community responsive curriculum has often been implemented through community service learning programs. The same case studies do not include a case study of community responsive curriculum but due to its importance, I will address some of the issues related to it. There are pressures for change coming from a range of stakeholders located outside of the institutions who ask different sets of questions. The public, who fund higher education through their taxes, want to know what benefit they receive from their expenditure. Neighborhoods around universities want those institutions to be responsive to their communities’ needs. Curriculum reforms must take all those stakeholders into consideration when planning their reforms. A number of questions need to inform planning of a service learning curriculum that is to become responsive to community needs. For example, is a responsive curriculum informed by a service learning philosophy? Is there a connection between the curriculum and learning service? Does the curriculum extend learning beyond the lecture room into the community? Is there a move to learn about the context in which service is to be provided? Is service learning designed in collaboration with the community?

Two additional issues follow; that of course versus programme based reforms and the role management in instituting responsive curriculum. Based on the information provided through the samples used for this study, there appears to be more focus on individual courses than on institutional programmes. If that is the case, the danger is that a lack of focus on programmes could lead to fragmentation and diluted impact at both institutional and national levels. The second is related to issues of management support and the broadening of participation for those not directly involved in teaching that could assist in ensuring that the reforms are more holistic. Volbrecht and Bougey, and Moore and Lewis case studies present arguments for support systems for curriculum responsiveness and greater participation of other role players not directly involved in teaching. Participation in policy debates was more focused on governance structures and did not address participation in management structures. The case studies argue for expanded access and extend the definition for institutional management. These case studies also redefine interdisciplinary curriculum and expand the definition to include non-teaching fields such as academic development. What is academic development? The studies make a case for linking curriculum and management as a strategy for responsiveness and sustainability.

In the absence of indicators to measure what progress has been made, I would like to conclude by using two Ensor (2003) findings from the Eastern Cape case studies that can be used in assessing progress made towards responsiveness. One conclusion was that the focus was still primarily on the undergraduate and postgraduate levels. In assessing curriculum responsiveness nation-wide we need to take a closer look at the balance between reforms in undergraduate and graduate curriculum responsiveness. The second conclusion was that there was little evidence of responsiveness to the needs of non-traditional learners; such as lifelong learners, those seeking mid-career
training, and those seeking to acquire new skills. There is a need to pay attention to this new class of students who are interested in obtaining a higher education. Lastly, I would like to address the needs of learners who cannot continue with their studies after entering higher education institutions. Should a responsive curriculum prepare them for success even if they fail to graduate? The policy documents made a case for multiple entry and exit points in higher education.

**Responsiveness for the Transformation of Society**

The concerns and interest in curriculum reforms are not only directed to curriculum responsiveness to those in higher education, but also to the needs of the broader society. How has the curriculum been responsive to the needs of the broader society and how has it contributed to the transformation of our society. There is a clear need to locate curriculum responsiveness discussions within the debate on the role of higher education in the transformation of society. Kader Asmal, as Minister of Education in 2003, raised the issue in his discussion document presented to the meeting of the president’s working group on higher education. He stated that higher education institutions in South Africa are not yet fully prepared to meet the challenge they face of being a catalyst in the transformation of the broader society.

The rationale for reforms in higher education has been to ensure that higher education contribute to the reconstruction of our society as well as to contribute to social and economic development. Issues to be raised at this stage relate to the contribution of curriculum reforms vis a vis the achievement of national development goals. The debates on the role of the university in Africa have emphasized its responsibility in contributing to the development path decided upon by the governments. Are there links between a responsive curriculum and local development goals such as the presidential national priorities? Are there links to the African Renaissance agenda and NEPAD? Are there links between a responsive curriculum and global development goals such as the millennium development goals (what are these goals)? There is a need to clearly articulate these linkages in order to inform social policies and to ensure that higher education institutions contribute to that development path. A social reconstructionist approach to curriculum design needs to be considered for its potential to make the curriculum more responsive to the needs of a broader community.

Castells, after an extensive overview of higher education in developing countries, concludes: “The ideological and political origins of most third world universities cannot be ignored but should not be permitted to suffocate the necessary evolution of the university towards its central role in modernization and development. If third world countries are also to enter the information age, rejecting an increasingly marginal role in the world system, developing policies must include the impulse and transformation of higher education systems as a key element of the new historical project” (1991; p.35). Some links between curriculum responsiveness and development goals are clear, but others are not.

**Conclusion**

Providing a meta-analysis of the case studies posed two unanticipated challenges. The first challenge had to do with the broad selection of the cases and the broad scope they covered such as programmes, disciplines, courses and management support issues. The selected case studies also represented different levels of study, i.e., undergraduate and post-graduate studies. Presenting a context that frames the need for responsiveness, then analyzing how the case studies have responded to that context posed the second challenge. The meta-analysis process and the case study process did not run parallel to each other so that contextual issues could
be addressed by the researchers by indicating how responsive the curricula has been to those issues.

There has been a tremendous effort to make the curriculum responsive to the needs of the nation but those efforts are too fragmented within institutions and across institutions for them to have impact on the education system and the nation. The case studies demonstrate researchers’ experiences and their efforts to make curriculum be more responsive to the learner’s needs. There is more than the documented evidence of curriculum responsiveness within institutions and in the entire system. These pose a challenge to other research on transformation efforts to make curriculum responsive and to contribute to the development of theory on these issues.

Another challenge is to find ways of addressing the fragmentation issue for greater impact on society. The one problem with the work that has been done through individual courses is that, as isolated cases they are good but lack the collective good. I would like to conclude by making a few suggestions on the elements that could be helpful in developing a curriculum that is responsive to the needs of our nation, planned in a way that it is not too fragmented and piecemeal to have impact on our society. First, there is a need to agree on a list of present and probable future skills often referred to in the policy documents without being defined, then seek clarity on what content provides those skills as well as how those skills should be imparted to the learners. Second, there is a need to organize information into topic areas across disciplines, with logical bridges between them to ensure coherence. To do that, there should be preparedness amongst those involved to start from a clean page that is not constrained by the current course content and structures. The results of such planning should be organized into manageable courses across disciplines and programmes. There is a need to infuse similar work in other disciplines and programmes within the institution. Taking resource limitations and constraints into consideration, some adjustments would need to be made to existing programmes and there might be a need to add new programmes and eliminate some programmes. Lastly, I would suggest the development of indicators that would help in the assessment of responsiveness through the curriculum.

I will conclude by returning to the issues raised at the beginning of this paper related to glocalisation challenges in the curriculum and how those issues have been addressed in the case studies. There is no direct indication in the case studies as to how local and global issues get integrated in the curriculum. There is more focus on the pedagogical issues and how knowledge and skills are imparted than on the content of what is imparted. The business school case study is the only one that makes reference to meeting global and local challenges. A curriculum that is South African needs to include what is South African and African in nature and its global goals need to be shaped by its local goals for national development.

Dr. Teboho Moja is a Visiting Professor in the Department of Administration, Leadership and Technology, The Steinhardt School of Education at New York University. Moja’s home is South Africa, and experiences from her long history as a leader in education reform enliven her teaching.

As Special Advisor to the Minister of Education in South Africa, Moja was charged with making policy recommendations for the transformation of higher education in South Africa. Although she is no longer a formal advisor, she finds it essential to keep current with new developments in her home country and often serves on advisory committees or weighs in on policy debates.

Moja currently serves on the board of the United Nations Educational, Scientific and Cultural Organization’s (UNESCO) Institute of International Educational Planning, a supranational body that determines priorities in education throughout the world.

She holds a B.A./B.Ed. from the University of the North, a M.Ed. from the University of Witwatersrand and a Ph.D. from the University of Wisconsin.
References


Endnotes


3 Briefing notes and discussion with Hanlie Griesel, March 30, 2004, Pretoria

4 These are some of the questions that inform the design of a community responsive curriculum at the University of Kentucky. http://www.amsa.org/programs/ky.cfm (accessed March 20, 2004)
Africa’s Migration Brain Drain:
The Costs and Benefits to the Continent

By Dr. Amadu Jacky Kaba

Introduction
The beginning of the twenty-first century is witnessing two major problems confronting the continent of Africa. They are the massive migration to the West by the educated and economic elites of the continent and the massive deaths of Africans in countries or parts of the continent where not only high proportions of people can at least read and write, but they also have stronger economies. The first problem is that, since the 1990s, hundreds of thousands or more of educated Africans have emigrated to Western Europe, North America and other parts of the developed world seeking better paying jobs, leaving the continent (with 874 million people as of July 2004) without the adequate human resource needed for any real chance of economic development. The second problem is that countries and regions in Africa with relatively high proportions of Africans who can read and write, or have high school or college education, and strong economies are also the countries and regions that are severely being devastated by the HIV/AIDS epidemic. The entire Southern African region, Kenya, and Nigeria, for example, are where one finds victims of the HIV/AIDS pandemic. The author will pursue this other side of the African brain drain in future research.

This paper focuses on Africa's migration brain drain in order to contribute to the general literature on this important issue. The paper is divided into two sections. The first section examines the rate of emigration to the West by educated Africans and their numbers in these Western nations. It attempts to provide examples for the reasons for such high rates of emigration by the best minds of the continent. It also examines the contributions that these Africans are making in those Western nations and the benefits to their original or ancestral countries as a result of their success in the West.

The second section of this paper presents an overview of estimates of the total numbers and percentages of blacks or people of African descent spread across the world. The data show that due primarily to historical reasons (such as slavery), people of African descent have significant to substantial populations in many countries and regions of the world. Let us begin by presenting an overview of the brain drain from developing countries and Africa's participation in it.
Migration Brain Drain from Developing Countries to the West

There has been a substantial increase in the populations of Europe, North America and other developed nations since the 1960s. A substantial portion of that population increase in the West is a result of migration of people from developing nations. Africa is among the parts of the developing world that has contributed significantly to that increase in populations in Europe and North America. The problem, however, for Africa and many other developing countries, is that a large number of those leaving for the developed world are highly educated individuals (Brain Drain) seeking a better life.

A number of reasons have been cited for the migration brain drain from developing countries: “The main reasons for leaving are political conflicts, search for material advantages and professional dissatisfaction. These and other ‘push’ factors encourage people to leave their countries of origin. At the same time, many industrialized countries lack health professionals and therefore attempt to ‘pull’ doctors, nurses and midwives to work in their countries.”¹ Writing about Taiwan’s brain drain in the 1980s, Zweig (1997) points out that “...low salaries, a lack of political and economic freedom, and a poor intellectual atmosphere were still pushing people to leave Taiwan” (p.94). Commenting on the reasons for China’s brain drain, Zweig notes “Numerous factors have been found to influence China’s brain drain including politics, jobs, family, problems of readjustment, and economic issues” (p.95).² In an article discussing Africa’s brain drain, the World Markets Research Centre asserted that “South African teachers are tempted to go abroad as the salaries and working conditions in the UK and other developed countries are much better than they are at home.”³ As noted above, low salaries are a major factor for the emigration of highly skilled individuals from developing countries. As Faye (2002) observes, in the Western African country of Senegal, a university lecturer earns between $246 and $261.5 a month, while a senior professor earns “about 923 U.S. dollars.” In Europe or North America, on the other hand, Faye notes that those same professors will earn three to five times their salaries in Senegal. Faye quoted the Nigerian-born American computer scientist Philip Emeagwali as saying “In reality, an African professional will not resign from his 50,000-U.S.-dollar a year job to accept a 500-U.S.-dollar a year job in Africa...”⁴

Zeleza (2002) points out that “The available estimates indicate that the number of foreign-born people, including migrants, refugees, and asylum seekers, in the 243 countries or territories that made up the world in 1985 increased from 75 million in 1965 to 120 million in 1990” (p.9).⁵ As of 2002, the total number of international migrants was estimated at 175 million (“Approaches to and Diversity of International Migration,” 2003:3).⁶ Leiman (2004) notes that the number of South-North migration of highly skilled workers from 1961 to 1972 was estimated at 300,000. By the end of the 20th century that figure increased substantially. According to Leiman, in the United States alone, the 1990 U.S. Census showed that

“In reality, an African professional will not resign from his 50,000-U.S.-dollar a year job to accept a 500-U.S.-dollar a year job in Africa...”
there were no less than 2.5 million highly educated immigrants from the developing world working or residing in the country (p.677). In the year 2000, there were 1.92 million employed foreign-born Asians, and 290,400 foreign-born blacks, with at least a bachelor’s degree in the United States (National Science Foundation, 2004:176). Kollehlon and Eule (2003) point to a 1994 study in Britain that found that 26% of African-origin blacks, compared with 13.4% of white Britons have some college education (p.1165). From 1960 to the 1980s, Canada, Britain and the U.S. accepted over 500,000 specialists (scientists, engineers and medical experts) from developing countries (Ushkalov and Malakha, 2001:80). Gwynne (1999) notes that in 1993, of the 2,685,000 scientists and engineers with degrees in the United States, 431,000 were born abroad. Of the 345,000 scientists and engineers with Ph.D.s, 101,000 were also born abroad. Gwynne also pointed out that 15.5% of all scientists and engineers in U.S. industries were born abroad and that one in three Ph.D.s was born abroad (p.2). Khan (2003) reports that between 1960 and 1975 an estimated 27,000 highly qualified Africans left the continent for the West... This number increased to approximately 40,000 between 1975 and 1984, and then almost doubled by 1987, representing 30% of the highly skilled manpower stock. Africa lost 60,000 professionals (doctors, university lecturers, engineers, etc) between 1985 and 1990, and has been losing an average of 20,000 annually since (p.1). In Europe, Hakata (2003) notes that there are over 7,000 African professionals living and working there (p.60). Among individual African countries, Mclymont (2001) notes that in 1978, 17% of doctors, 20% of university lecturers and 30% of engineers in Sudan had left to work abroad (p.32). Crush (2002) points out that between 1987 and 2001, South Africa lost an estimated 310,000 of its citizens, including 50,000 professionals as a result of the brain drain (p.152). According to Carrington (1999), the migration rates to the Organization for Economic Co-Operation and Development (OECD) countries of highly educated individuals from Ghana was “...a dramatic 26 percent; for South Africa, it is more than 8 percent; for Egypt, the Brain drain includes 2.5 percent of such individuals emigrating to the United States and the other 5 percent emigrating to other OECD countries” (p.169). African Brain Drain to the United States.

Migration Brain Drain from Africa

The migration of highly skilled Africans has reached a point that it has caused international debates and suggestions as to how to reduce its impact on the societies left behind. In a speech at the Pan African Conference on the Brain Drain in Elsah, Illinois, on October 24, 2003, the renowned Nigerian-born American computer scientist, Philip Emeagwali, claimed that “For 10 million African-born emigrants, the world over ‘home’ is synonymous with the United States, Britain or other country outside of Africa. Ten million Africans now constitute an invisible nation that resides outside Africa.”

“For 10 million African-born emigrants, the world over ‘home’ is synonymous with the United States, Britain or other country outside of Africa. Ten million Africans now constitute an invisible nation that resides outside Africa.”
The United States may have the largest number of educated Africans who live and work in Western nations. According to the U.S. Census Bureau, as of 2002, there were just over 1 million African immigrants residing in the United States. Just as most African slaves were brought to the United States from West Africa, so also are West Africans, the highest proportion of all African immigrants emigrating to the United States. This fact might contribute to why West Africa is still underdeveloped, because for hundreds of years, that part of the continent has been losing its talented people to Western nations and other parts of the world. According to the United States Census Bureau, as of the year 2000, there were an estimated 881,300 African immigrants in the United States. During that year, West African immigrants comprised 326,507 (37% of the total African immigrants), with Nigerians comprising 134,940 (41.3%), Ghana 65,572 (20.1%), and Sierra Leone 20,831 (6.4%) of the West African total. East African immigrants in 2000, comprised 213,299 (24.2% of the total African immigrants), with Ethiopians comprising 69,531 (32.6%) of the East African total. North African immigrants in 2000 comprised 190,491 (21.6% of the total African immigrants), with Egyptians comprising 113,396 (59.5%) of the North African total. In 2000, Middle African immigrants in the United States comprised 26,900 (3% of all African immigrants in the United States). In 2000, Southern African immigrants in the United States comprised 66,496 (7.5% of all African immigrants in the United States), with South African immigrants comprising 63,558 (95.6%) of the Southern Africa total. There were 57,607 (6.5% of all African immigrants) African immigrants in the United States in 2000 whose origin was not classified. The 134,940 Nigerian immigrants in the United States in 2000 comprised 15.3% of all African immigrants in the United States.20

As a group, despite their relatively small population, proportionally, the 700,000 African immigrants in the United States (as of March 2000), were not only more highly educated than their compatriots in Africa, but they also have become one of the most highly educated groups within the United States. According to a 2001 U.S. Census Bureau report, 94.9% of these African immigrants age 25 and over have at least a high school diploma, compared with 87% of the American population. Furthermore, among the 700,000 Africans in the United States (as of March 2000), those aged 25 and over with at least a bachelor’s degree was 49.3%, substantially higher than the average for the general population of 25.6%, and other foreign born populations in the country such as Asians (44.9%).21

In a study of blacks in the United States entitled, “Black Diversity in Metropolitan America,” Logan and Deane (2003) claimed that, “Education attainment of Africans (14.5 years) is...they also have become one of the most highly educated groups within the entire United States...”
higher than Caribbean (12.8 years) and of African Americans (12.5 years) —Indeed, it is higher than even whites and Asians. This suggests that black Africans immigrate selectively to the U.S. based on their educational attainment or plans for higher education."\textsuperscript{23}

Moreover, Egyptian and Nigerian immigrants in the United States are among the most highly educated groups. For example, according to a 1998 U.S. Census Bureau publication, of a list of over 65 ancestry groups listed in 1990, 60.4% and 52.9% of people of Egyptian and Nigerian descent age 25 and over, had at least a bachelor’s degree respectively. No other single group (English, German, Irish, Italian, Scottish, Dutch, etc.) had a 50% bachelor’s degree attainment rate. For master’s degrees, 26.3% of Nigerians and 25.6% of Egyptians age 25 and over held such degrees in 1990, with Egyptians third only behind Nigerians and Iranians (26%).\textsuperscript{24} In a World Bank policy research paper (2003), Richard H. Adams, Jr. points out that in 2000, there were 90,620 Nigerian immigrants and 75,170 Egyptian immigrants age 25 and older who had attained tertiary education in the United States. Adams, also points out that in 2000, there were 361,773 Moroccan immigrants, and 91,019 Tunisian immigrants aged 25 and over who had attained tertiary education in OECD countries (p.26).\textsuperscript{25}

According to Leiman (2004) “...hardly any educated people are left in Sierra Leone to help a country with a literacy rate of only 15%” (p.675),\textsuperscript{26} with a high proportion of them now residing in the United States. Faye (2002) notes that in the West African nation of Senegal, over 105 lecturers and researchers have emigrated primarily to American and French universities in recent years (p.1).\textsuperscript{27} Let us now turn to the costs and benefits of the African brain drain to Africa.

**Benefits of the Migration Brain Drain to Western Nations**

Many scholars and other commentators have argued that the brain drain from Africa not only benefits Western nations economically and socially, but it also has negative short and long-term consequences for the world’s poorest continent.\textsuperscript{28} Oyowe (1996) writes that:

The US Congressional Research Service, for example, computed in 1971-72 that the USA gained $20,000 annually on each skilled migrant from the developing countries. If this rather conservative amount is extrapolated for Africa, then the continent lost more than $1.2 billion of investment between 1985 and 1990 on the 60,000 or so African professionals who emigrated during that period. Much closer perhaps to the truth today would be the estimate made by the United Nations Conference on Trade and Development (UNCTAD), using 1979 prices which put a cash value of $184,000 on each African professional migrant (and this only for those between the ages of 25 and 35) (pp. 59-60).\textsuperscript{29}

Writing about an effort to recruit 44 South African physicians to Canada, Crush (2002) notes that “The estimated cost of training a South African doctor is $150,000. The Alberta [Canada] government spent a mere $1.2 million on the recruiting scheme, providing a $10.4 million net gain of medical expertise at South African expense” (p.147).\textsuperscript{30} Leslie (2003) notes that there were 1,700 South African trained doctors practicing in Canada alone (p.12).\textsuperscript{31}

An estimated 100,000 expatriates from Western nations or the developed world are employed in Africa. It costs the continent $4 billion annually to pay the salaries of those foreign expatriates (Kollehon and Eule, 2003:1165). The World Markets Research Centre (2002) points out that “Skilled workers emigrating from South Africa are estimated to have cost the country R67.8bn (US$7.8bn) in lost human capital since 1997 and this has retarded economic growth.... Currently there are no official statistics on the number of teachers who have left South Africa, but estimates put the figure at about 8,000”\textsuperscript{32}

According to the International Organization for Migration:

> Development in Africa cannot be achieved without the participation of an adequate contingent of human resources. African countries see their efforts on the way to a better health system stifled by professional migration.... an important part of development aid to Africa is used for the training of medical personnel, who subsequently leave to apply
their skills and qualifications in developed countries... The number of Beninese doctors in France now far exceeds the number in Benin.33

“...we are operating one-third of African universities to satisfy the manpower needs of Western nations. One-third of [the] African education budget is a supplement for the American education budget.”

The Nobel Prize winning human rights organization, Physicians for Human Rights, released a report in July 2004. They recommended that rich countries in the West reimburse African countries for the loss of their health professionals who leave the continent for the West after being trained by African universities at the expense of the people of the continent. The 129-page report entitled “An Action Plan to Prevent Brain Drain: Building Equitable Health Systems in Africa” notes that “Data from the American Medical Association (AMA) reveal that 5,334 non-federal physicians trained in African medical schools were licensed to practice medicine in the United States in 2002” (p.2). The report also noted that 1,200 Ghanaian physician are in the United States (p.2).34

Mazrui (2002) points out that Philip Emeagwali might have overstated a claim that Africa is indirectly sponsoring developed countries, but that it might be a claim that is worth considering. According to Mazrui, Emeagwali had asserted that “One in three African university graduates lives and works outside Africa. In effect, we are operating one-third of African universities to satisfy the manpower needs of Western nations. One-third of [the] African education budget is a supplement for the American education budget. In effect, Africa is giving development assistance to the United States” (pp. 86-87).35 Vaknin (2002) also made a similar claim:

Poor countries invest an average of $50,000 of their painfully scarce resources in every university graduate – only to witness most of them leave for richer places. The have-nots thus end up subsidizing the haves by exporting their human capital, the prospective members of their dwindling elites and the taxes they would have paid had they stayed put. The formation of a middle class is often irreversibly halted by an all pervasive brain drain.36

“The short-term benefit to Africa is seen in the increase in remittances from the West to Africa, especially since the 1990s.”

Haque and Kim concluded in a 1995 International Monetary Fund (IMF) brain drain study that “...human capital flight generates a permanent reduction of per capita income growth rate in the country of emigration, and that the effect of brain drain on the growth in the country of immigration varies over time with the evolution of the ratio of the average level of human capital in the two countries” (p.580).37 It is obvious now that the brain drain from Africa is also beginning to benefit the continent in substantial ways. Let us take a closer examination at this claim.

Benefits of Africa’s Brain Drain to Africa

It is evident that the brain drain from Africa has a short and long-term negative impact on the continent, but it is also true that it has a short and long-term positive impact. The short-
A substantial proportion of African immigrants in the U.S. are “...heavily concentrated toward the top of the occupational hierarchy in managerial and professional specialty (MPS) occupation” (Kollehlon and Eule, 2003:1165). A 2001 U.S. Census Bureau report shows that of the 400,000 African immigrant workers age 16 and over in the United States in March 2000, 36.5% were in managerial and professional specialties (compared to 30.9% of native workers), the highest rank of job categories in the nation. In 1999, that same 2001 U.S. Census report showed that the median income for all households in the country was $40,816. Of the 300,000 African immigrant households in the United States in 1999, their median income was $36,371, higher than the average of all foreign-born households of $36,048.

In 2000, according to Logan and Deane, the median household income for African immigrants in the United States was $40,300. Also, according to the U.S. Census Bureau statistics, of the over 65 ethnic ancestry groups listed, the median household income for people of Egyptian descent in the U.S. in 1989 was $40,905, third behind people of Maltese ($40,552) and Israeli descent at $40,242.

Remittances to the developing world are now reported to be more than foreign aid. In 2003, worldwide remittances to developing countries surpassed $100 billion (Wucker, 2004: 37). In 1995 remittances to the developing world was estimated at $70 billion (Guarnizo, 2003:672). Writing about Asian immigrants in the state of California, Saxenian (2002) asserted that “For every 1 percent increase in the number of first-generation immigrants from a given country, for example, California’s exports to that country go up nearly 0.5 percent” (p.30). Lakshmi (2003) reported that 60% of the foreign direct investments in China is made by Chinese people outside the country. In 2003, migrant worker remittances to Latin America was estimated at $38 billion (Wucker, 2004: 37).

According to Khan (2003) “Already, remittances (the term for migrant payments) to Africa accounts for more than donor aid flows to the Continent” (p.1). “The IMF estimates the African Diaspora now constitutes the biggest group of foreign investors in Africa.” According to Khan (2003) “In Eritrea, for example, remittances account for 83 percent of exports. In Mali, payments from migrants account for a staggering 20 percent of gross national product” (p.1). According to Wucker (2004: 37), remittances to Somalia were $500 million annually. The money wiring service company, Western Union, was cited to have claimed that “… it is not atypical for an immigrant to wire $300 per month to relatives in Africa.” According to Adams, in 1999, remittances from Egyptians abroad was estimated at $2.959 billion, $1.772 billion for Moroccans, $1.198 billion for Nigerians, $696 for Tunisians and $607 million for Sudanese (2003: 23).

The long-term positive benefit of the African brain drain to Africa is that, following the end of the Cold War, various ethnic groups or factions in so many African countries had to settle old grievances and conflicts amongst themselves. Just as we saw with the United States civil war, the Chinese
civil war or the wars of Europe, those African elites in the West are to some extent there for safekeeping. Many tend to return home once there appears to be political and economic stability.

There is the potential that just as Europe lost so many of its talented citizens to the United States before and after World War II, and those European emigrants to the United States ended up helping to rebuild Europe (through their taxes) during the Marshall Plan, which gave over $12 billion in grants (which is said to be around $100 billion in today's economy) after the war, so also Africans abroad will help to rebuild their ancestral continent. From 1961-1968, Britain lost 26,800 scientists and engineers to the United States (The International Executive, 1970:24). Among those European scientists who fled Germany, were Albert Einstein, one of the greatest physicists of all time, and Leo Szilard, who is credited as being the driving force behind America's atomic bomb.

According to Blau (2004), the European Union and other European organizations have begun implementing several plans to reduce the continent's brain drain to the United States. According to Blau, 400,000 of the total of 11 million European Scientists work in the United States. Furthermore, Blau pointed to a 2003 report that claims that over 70% of citizens of the European Union who attained doctorates in the United States from 1991 to 2000, had no real plans of returning and that 75% of European researchers who spent time working in the United States in the past ten years decided to remain in America. Germany accounts for 35.9%, the UK 31.9%, Italy 7.7%, and France 6.5% of European scientists in the United States (p.2). There have also been reports since the 1990s of East Asian scientists in the United States returning (‘reverse brain drain’) home to work. Wingrove (1995) notes that a significant number of East Asian science and engineering students in the United States are returning home to China, South Korea, Taiwan and Singapore. Part of the reason for the ‘reverse brain drain’ is that as East Asia becomes politically stable, and the economies in those countries grow, Western expertise is increasingly needed.

Although the history of the Black race or people of African descent includes slavery and its bitter memories, an unintended benefit might have resulted from it: the significant to substantial numbers of black people or people of African descent, spread in countries and regions across the globe. In Canada, according to the 2001 Canadian census, of the 29,639,030...
people in that nation, blacks comprised 662,215 (2.2%). In the United Kingdom, White (2002) claims that as of 2001/2002, of the total population of nearly 60 million, blacks comprised 2 percent.

People of African Descent in Latin America and the Caribbean

Just as the United States is among the most ethnically and racially diverse countries in the world, the 22 countries/territories that make up Latin America (excluding the Caribbean) are also among the most ethnically and racially diverse regions of the world. As of July 2001, research shows that out of the estimated total population of 490 million in Latin America, Whites comprised 182,690,461 (37.3%), Mestizos (mixed race of Whites and Indians) 152,751,357 (31%), Amerindians 58,265,533 (11.9%), Blacks 16,071,290 (3.3%), Mixed (Blacks mixed with Indians or with Whites or Mestizos) 73,844,229 (15.2%), and other racial groups comprised 7,217,685 (1.5%). If the definition of blacks in the United States were used in Latin America, the black population would have been at least 90 million (18.5% of the total 490 million) in July 2001.

Blacks or people of African descent constitute the majority of the 24 countries/territories that make up the Caribbean. As of July 2001, research shows that the total population of the Caribbean was 36.9 million and that at least 65% of that total population was black or people of black descent. Research by this author shows that as of July 2001, there were at least 151 million (19%) blacks or people of African descent out of the estimated 801 million in the Western Hemisphere (the Caribbean, North America and Latin America).

Blacks in the Middle East

There is a significant black population in the Middle East, including Saudi Arabia, Israel, Gaza, the West Bank and Yemen. However, unlike Western countries or Latin American nations, countries in that region do not classify blacks separately. Ann M. Simmons reported in the Los Angeles Times on Iraq’s black African population by pointing out that “…some academics [in Iraq] put the number of Iraqis of African descent at about 1%, though others believe that figure could be as high as 5%.”

Benefits of the Large Numbers of People of African Descent Outside Africa to the Continent

Due to their large numbers in countries and regions outside Africa, blacks or people of African descent are gaining significant political and economic positions in those entities. For example, blacks (using the definition of a black person in the U.S.), tend to be major players or important officials in many different countries in the world. It is not uncommon to see black cabinet officials, legislators, judges, businessmen and women, etc., in countries in the Middle East, Europe and the Western Hemisphere. This is a very important development. In the United States, for example, the first George W. Bush administration had three blacks in top government positions: Secretary of State, Colin Powell, National Security Adviser (and Secretary of State nominee for...
the second Bush administration), Condoleeza Rice, and Secretary of Education, Rod Paige. Also, the 108th Congress of the United States, which took office in late January 2003, had 39 black members (9%) of the 435 total members in the House of Representatives.61 The 109th Congress of the United States has one African American Senator, Barak Obama, whose father was a Kenyan immigrant scholar in the United States. In addition, there is a black man, Clarence Thomas, among the nine members of the U.S. Supreme Court. In Brazil, Raymond Colitt reported in the Financial Times in May 2003 that, for the first time a black man, Barbosa Gomes, was appointed to the Brazilian Supreme Court.62

In the United Kingdom, as of June 12, 2003, there were two black cabinet ministers in their government. They are Baroness Amos, the first black woman cabinet minister, who was appointed as International Development Secretary in May 2003, and Paul Boateng, Treasury Minister, who became the first black minister in the United Kingdom’s history in 2002. There is also the influential Saudi Arabian ambassador to the United States, Prince Bandar bin Sultan, who has an African mother from Sudan. Kofi Annan, a Ghanaian, is the Secretary General of the United Nations as of July 2004.

It is extremely important for the future development of Africa, if these powerful and influential people of African descent, spread across the world begin to meet annually at conferences to get to know each other and discuss ways that they can be helpful to one another and to Africa. As for evidence of the direct benefit to Africa of the large numbers of people of African descent across the world, African Americans are now contributing in many important ways to the continent (Kaba 2004:18-25).63

Conclusion

This paper has attempted to present a variety of statistics pertaining to the numbers of Africans in the Diaspora. It has presented evidence that demonstrated that the continent is losing in many important ways as a result of the continuous emigration of its talented people. The paper, however, also shows that Africa is beginning to benefit from the brain drain as the economic and political conditions of people of African descent in the West improve.

The paper also highlights the massive numbers of people of African descent in the Western Hemisphere, Europe and the Middle East. One could even venture to suggest that due to historical reasons, we might be witnessing a rising and peaceful ‘African Empire’ outside of Africa, with strong political and economic influences in the twenty-first century. This author has carefully studied the dispersion of different racial and ethnic groups across the world, and found that compared to other racial groups, proportionally people of Jewish, Caucasian and African descent are spread out in significant to substantial numbers in many countries and regions outside of their ancestral continents. This means that their descendants will inherit substantial portions of those countries and regions in the decades and centuries to come.

As they continue to rise economi-
cally and politically, people of African descent outside of Africa and Africans, especially the elites, must begin to meet annually at conferences in order to learn about each other’s interests, and how they could best help one another. As the data in this paper has illustrated, people of African descent outside of Africa have a tremendous potential to make important contributions not only in Africa, but also in the countries and regions that they now call home.

Dr. Amada Jacky Kaba is a Post-Doctoral Associate/Assistant Professor at the Institute of Global Cultural Studies, State University of New York at Binghamton.

Endnotes

28 See Lowell, Lindsay B. 2001. “Some Developmental Effects
Endnotes

32 “The Brain Drain — Africa’s Achilles Heel,” in “Africa In Focus 2002.”
38 For example, according to the United States Census Bureau, in the U.S. “Over an adult’s working life, high school graduates can expect, on average, to earn $1.2 million; those with a bachelor’s degree, $2.1 million; and people with a master’s degree, $2.5 million, according to a report released today by the Commerce Department’s Census Bureau. People with doctoral ($3.4 million) and professional degrees ($4.4 million) do even better” (Source: “Census Bureau Report Shows ’Big Payoff’ from Educational Degrees,” U.S. Census Bureau Press Release, July 18, 2002. Retrieved on July 18, 2004 from http://www.census.gov/Press-Release/www/2002/cb02-95.html).
46 Emeagwali, Philip. 2003, October 24.
47 Emeagwali, Philip. 2003, October 24.
49 “Brain Drain or Overflow?” The International Executive, 12, 3, 23-25.
58 Compiled and calculated by author based on data present- ed in the Central Intelligence Agency: 2001 World Factbook (Same source as above).
59 Compiled and calculated by author based on data present- ed in the Central Intelligence Agency: 2001 World Factbook (Same source as above).
Teaching with Technology across the Curriculum:
Making the Case for Countries in Africa

By Dr. Kwabena Dei Ofori-Attah

Introduction
The last 40 years have seen dramatic developments, improvements and changes in the area of technology. These changes have affected the way people exchange information, do business, learn, teach, shop, or travel. As a matter of fact, it will not be too much to argue that technology has permeated every aspect of our life. All over the world, people have gradually made significant changes and adjustments in their daily activities to embrace these changes (Hall & Bannatyne, 1999; Heide & Henderson, 1994). It is common to see people using cellular phones to call others at all sorts of locations over long distances, sometimes over hundreds or thousands of miles; people use laptop and desktop computers at different locations to access the Web, chat or check e-mails; others use computers to shop online or engage in instant exchange of messages. The activities people do with modern technology appear to be unlimited or endless (Bitter & Pierson, 1999).

Fortunately for the people in Africa, especially students, the continent has been touched by technology, though at a very low level. In 1995, only 3 countries in Africa had access to the Internet. Today, all 54 countries in Africa have access to the Internet (Economic Commission for Africa, 2003). In April 2002, African governments met in Senegal and adopted a continental program to accelerate the pace of Information and Communication Technology development in all countries in Africa. A special agency, The New Partnership for Africa’s Development (NEPAD) was charged with the responsibility of making this a reality for all countries in Africa (Okpaku, 2003). This trend is an illustration of the interest people in Africa have showed in using technology to promote national development.

This paper will examine the progress countries in Africa are making to implement educational technology across the curriculum in the elementary and high schools. It will touch on the training of teachers and the implementation of educational technology across the curriculum. Finally, the paper will suggest strategies that countries in Africa may use to enhance the use of computer technology in the elementary and high schools.
“Some schools in Benin, Burkina Faso, Cameroon, Chad, Gambia, Ghana, Kenya, Mali, Namibia, Senegal, South Africa, and Uganda participate in a global Internet-based project.”

What is the Status of Educational Technology in Schools in Africa?

When the Internet started over forty years ago, perhaps no one ever imagined that people would put it several uses apart from the exchange of information among the various departments and agencies of the Advanced Research Project Agency Network of the Department of Defense (ARPANet). Today, however, as a result of the successful operations of the Internet by ARPANet, people all over the world are reaping the benefits of what started as a quest for alternative source of communication among the various departments of the United States government in case there was a disaster along the main lines of communication (Hernes, 2002).

Perhaps, it may not be out of the ordinary to argue that today every country in the world, including all countries in Africa, has heard about what technology can do to promote the economic and social development of a nation (Parks, 2004). Some countries in Africa such as Egypt, South Africa, Nigeria, Libya, Ghana, Gabon, and Algeria have all made varying degrees of progress in the use of computers in their society. In Senegal, a non-profit organization, Joko, collaborating with Hewlett-Packard, has introduced computer projects to assist people who cannot read or write use the Internet for personal and business activities (Carney & Firpo, 2002). In Nigeria, another private group, Youth for Technology Foundation has also introduced a project, The Owerri Digital Village, with the sole aim of providing “disadvantaged Nigerian youth in rural communities with access to technology” (Ugwuegbu, 2002, p.27).

In the countries of Egypt, Ghana, Nigeria, Kenya, Zimbabwe, Namibia, and South Africa, apart from technology giant leaps in higher education, many schools in the urban areas use technology tools such as the Internet for teaching and learning (Jensen, 2003). Some schools in Benin, Burkina Faso, Cameroon, Chad, Gambia, Ghana, Kenya, Mali, Namibia, Senegal, South Africa, and Uganda participate in a global Internet-based project. The project aims at improving “mathematics and science education across the globe, to raise environmental awareness, and to contribute to a worldwide scientific database about Earth” (Haddad & Jurich, 2002, p.37).

Although the penetration of technology in the elementary and high schools is at very low level in Africa, indications from the few schools that are using technology in teaching and learning make the case for a full scale integration of technology into the curricular of all educational systems on the continent.

At first, it may sound a little odd for any one to argue for the use of technology in the schools in countries in Africa where poor infrastructure, corruption, poverty, illiteracy, social unrest, health-related issues, poor school buildings, poor teaching facilities or laboratories, hamper the smooth functioning of educational institutions. However, it is for these very reasons that every country in Africa should now plan and implement a national policy to implement technology across the curriculum. As Capper (2003) has pointed out, a
review of over 100 research reports of
the integration of technology in the
curriculum suggests that the use of
technology:

- Improves students’ attitudes and
certainty and is especially
beneficial for “at risk” students
- Provides instructional opportunities
otherwise not available
- Increases student collaboration on
projects
- Significantly improves students
problem-solving skills
- Increases the preparation of
students for most careers and
vocations
- Tends to shift teaching styles from
traditional direct approaches to a
more student-oriented approach.
(p. 60)

Norton & Sprague (2001) also add
that integrating technology into the
curriculum makes students, active,
constructive, collaborative, inten-
tional, conversational, and reflec-
tive in the learning process. They
argue further that technology can
contextualize learning and promotes
learning tasks “that are situated in
real-world tasks or simulated through
some case-based or problem-based
learning environment” (Norton &
Sprague, 2001, p.5). Provenzo (2002,
p. 7) argues, “No matter how isolated
or poor, a child with a connection
to the Internet and the World Wide

“…integrating technology into the curriculum makes students, active, constructive, collaborative, intentional, conversational, and reflective in the learning process.”
Web can have access to the great museums and libraries of the world.” Perhaps, this argument more than any other statement, sums up the case for integrating technology into the curricular of all schools in Africa, since on this continent, many students live in isolated rural areas where school facilities, if any, are poor (Economic Commission for Africa, 2003).

Who is Providing Educational Technology Tools to Elementary and High Schools in Countries in Africa?

The integration of technology in education in Africa is gradually getting the attention of educational planners and curriculum developers in Africa. African governments and private agencies collaborate to make this possible. In many cases the contributions made by the private sector appear to be greater than the national governments.

African governments have designed educational policies that give priority to the use of educational technology in the school system after years of foot-dragging. Nigeria, for instance, has set up a separate governmental agency, National Information Technology Development Agency (NITDA), charged with the promotion of information communication and technology in all sectors of the economy including education (National Information Technology and Development Agency, 2001). However, for several reasons, these policies remain to be fully implemented. It is in light of this that the new educational policy in Botswana is worthy of noting. According to Africa National SchoolNet 2004:

Botswana is one of the few African countries with a national, government-led programme on ICTs in education that targets all schools. A government policy entitled The Revised National Policy on Education highlighted the need for all learners to be given computer skills at all levels of schooling in Botswana. The Revised National Policy on Education released in 1994 recommended the introduction of Computer Science as a subject option in senior secondary schools and computer awareness for the three years of junior secondary school. As a result, a new curriculum for computer awareness has been developed and piloted in eleven junior secondary schools. The curriculum aims to equip learners with computer skills that can be applied in all subjects. The department has adopted an ‘infusion strategy’, whereby all teachers and learners are equipped with basic computer skills. The department has taken care to train all teachers, irrespective of subject specialization. This is intended to counter the historic focus on mathematics and science teachers, which has developed a kind of aloofness amongst these teachers in schools. The department aims to give a message that everyone can use computers (African National SchoolNet, 2004).

The Private Sector

Over 50 international agencies and private organizations and companies are in the forefront for the provision of technology in nearly all African countries. For the purpose of this discussion, only 4 of these will be mentioned. These are the United States Department of State, World Links, Schools Online, and Africa SchoolNet.

American sponsored schools in the urban areas of 36 countries in Africa have perhaps the best technology equipment in their school systems. By the close of the year 2003, the United States had 40 sponsored schools in Africa. Some of the classrooms have access to state-of-the-art technology resources. In the American School in Lagos for instance, “each classroom has at least one networked computer workstation, and a portable computer cart containing a full classroom set

“By the close of the year 2003, the United States had 40 sponsored schools in Africa”
of laptops with wireless networking capacity on each level. The library holds over 20,000 volumes and is approximately 2800 square feet in size and incorporates a group instruction area, individual reference and study areas, primary age student reading room, computer lab, periodical section and an audio-visual resource facility” (United States Department of State, Office of Overseas Schools, 2004). In some cases, the quality of computers and computer programs exceed those that are used in many developed countries, including the United States of America.

Another non-governmental agency actively involved in the development and promotion of educational technology in Africa is World Links. “The mission of World Links is to improve educational outcomes, economic opportunities, and global understanding for youth in developing countries through the use of technology and the Internet” (World Links, 2004). In tune with its mission statement, World Links has established a number of schools in Africa. The countries include Botswana, Burkina Faso, The Gambia, Ghana, Mozambique, Rwanda, Senegal, South Africa, Uganda, and Zimbabwe. World Links collaborates with other non-profit agencies such as the International Education and Resource Network (IEARN) to promote its educational activities. In Botswana, World Links has established working relationship with the Ministry of Education to accelerate the pace of technology for schools in the country. It has helped equip over 15 schools in the country with computers and other technology tools to enhance teaching and learning (Ratsatsi, 2002).

Schools Online is another private organization active on the continent of Africa in the development of educational technology in the classroom. The mission of Schools Online is to “help students gain access and use the communication and information resources of the Internet for learning and cross-cultural dialogue” (Schools Online, 2004). The countries in Africa involved in the programs organized by Schools Online by the end of 2003 included Egypt, Ghana, Kenya, Senegal, Tanzania, Uganda, Zambia, and Zimbabwe. In each country, Schools Online selected a few schools for initial participation in its technology programs.

Egypt had 11 schools, Uganda had 10 elementary and high schools; Senegal had 3 schools, Ghana had 17 schools; South Africa had 4; Kenya had 1; Tanzania had 3; and Zimbabwe had 30 schools. See Table 1.

Communication technology in the schools in Africa has projects in about 34 African countries. These include Algeria, Angola, Botswana, Benin, Burkina Faso, Burundi, Cameroon, Congo, (Democratic Republic), Cote D’Ivoire (Ivory Coast) Egypt, Ethiopia, The Gambia, Morocco, Lesotho, Namibia, South Africa, Swaziland, Mozambique, Rwanda, Senegal, Sierra Leone, Kenya, Mauritania, Tanzania, Tunisia (See figure 1 on next page).

Each country sets its own agenda

Table 1
Countries in Africa Participating in Technology Programs Organized by Schools Online by 2003

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of Elementary and High Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt</td>
<td>11</td>
</tr>
<tr>
<td>Ghana</td>
<td>17</td>
</tr>
<tr>
<td>Kenya</td>
<td>1</td>
</tr>
<tr>
<td>Senegal</td>
<td>3</td>
</tr>
<tr>
<td>South Africa</td>
<td>4</td>
</tr>
<tr>
<td>Tanzania</td>
<td>3</td>
</tr>
<tr>
<td>Uganda</td>
<td>10</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>30</td>
</tr>
</tbody>
</table>


SchoolNet Africa is another major non-profit making organization involved in Information
and objectives in pursuit of the implementation of policies that will promote the development and the use of educational technology in the elementary and high schools. In Nigeria for instance, the local chapter of SchoolNet has stated among other things that one of its main objectives is “to ensure that Nigerian schools are given the opportunity to allow their students to cross the ‘Digital Divide’, and use ICTs to enhance their learning experience.” It is the ultimate goal of the SchoolNet Nigeria to reach all schools in the country and equip them with computers and other communications technology. In Mozambique, as a result of the activities of SchoolNet Mozambique, and World Links, over 20 schools have access to the Internet via TV cabling (Cossa & Cronjé, 2004).

Technology Training for Elementary and High School Teachers

The implementation of technology in the schools in Africa, like elsewhere in the world, would not be possible without proper and adequate training for teachers. This is so because the skills teachers’ possess in the classroom can make a difference in the achievement of students not only in content areas but also in the use of technology. Effective teaching in all areas in the 21st century classrooms requires the services of teachers who can master and handle technology in the delivery of instruction (Mehlinger & Powers, 2002).

Over 80% of the teachers in the classrooms in Africa started teaching before the integration of technology gained the attention of curriculum planners. This means that technology training was not part of the curriculum they followed for their teacher education programs (SchoolNet Africa, 2004). The implication of this is that educational planners in Africa have to find a way of making these teachers competent in handling technology in the classroom. The normal route is through the traditional in-service training programs for teachers (Fontaine, 2002). Few countries, such as Uganda, South Africa, and Kenya, have made technology part of the pre-service teacher education programs. In this direction, African and foreign governments, as well as private organizations are very active in helping teachers in the different countries in Africa make the grade in handling technology in the classroom. One of such non-profit organizations involved in the technology training of teachers in Africa is World Links. It is involved in teacher technology programs in

“Effective teaching in all areas in the 21st century classrooms requires the services of teachers who can master and handle technology in the delivery of instruction”
several countries including Ghana, Gambia, Mauritania, Mozambique, and Burkina Faso. As Carlson & Gadio (2002) point out:

World Links has been a pioneer in developing and delivering teacher professional development programs in the use of technology to improve teaching and learning in developing countries. It is by no means the “definitive” program, nor is it the most easily replicated and scaled. However, for purposes of illustration, the complete World Links Teacher Professional Development program includes 200 hours of training, equivalent to five 40-hour weeks. This takes teachers with no prior contact with computers to full competency over a two- to three-year period. (p.122)

In Ghana, World Links has been very active, training teachers to be competent in using technology since 1997. It has helped trained over 1000 teachers since the introduction of their program in the country. It relies upon financial support from local and international sources to promote its technology programs for teachers, students and others in the larger Ghanaian society.

In Namibia, since 1992, the Swedish government has been supporting teacher education programs to help local teachers acquire skills in using technology in the classroom. Through a project called Teacher Education Reform Project (TERP), the Swedish government collaborates with the Namibian government to support the implementation of teacher education programs (Craig, Kraft, & Plessis, 1998). The Namibian government and the USAID, AED/LearnLink have collaborated to institute another teacher training project, called Computer Assisted Teacher Training (CATT). Among other things, the goal of this project is to:

- Support the National Institute for Educational Development (NIED) and its designated staff in acquiring the necessary tools and skills to develop computer-assisted training courses for advisory teachers, inspectors, and others in the four education regions where USAID is assisting the Ministry of Basic Education, Sport and Culture (MBESC);
- Support NIED in the development of a communications network for the training of advisory teachers, inspectors, and others involved in the lower primary phase by linking them to NIED through the Internet and other key computer-assisted delivery mechanisms;
- Support the development of prototype curriculum-based teacher training materials for primary school;
- Support the expansion of an administrative framework at the level of the MBESC and NIED to include “Master Information Teachers,” who champion the use of teaching/learning technologies;
- Contribute to discussions of national policies, strategies, and guidelines on the use of teaching/learning technologies;
- Support the National Institute for Educational Development (NIED) and its designated staff in acquiring the necessary tools and skills to develop computer-assisted training courses for advisory teachers, inspectors, and others in the four education regions where USAID is assisting the Ministry of Basic Education, Sport and Culture (MBESC);
- Support NIED in the development of a communications network for the training of advisory teachers, inspectors, and others involved in the lower primary phase by linking them to NIED through the Internet and other key computer-assisted delivery mechanisms;
- Support the development of prototype curriculum-based teacher training materials for primary school;
- Support the expansion of an administrative framework at the level of the MBESC and NIED to include “Master Information Teachers,” who champion the use of teaching/learning technologies;
- Contribute to discussions of national policies, strategies, and guidelines on the use of teaching/learning technologies;

In South Africa, technology is one of the 8 mandatory academic areas for all students in grades 1 through 9 and beyond.
with technology through the Shoma Education Foundation. Through this foundation, the government of South Africa is actively working with multiple public and private organizations to help teachers acquire skills in integrating technology in the curriculum. One of the main objectives of the computer-based training is, like the Namibian case, to develop teacher’s computer literacy skills essential in implementing the new curriculum. On the continent of Africa, Egypt is another nation where integration of technology in the school curriculum appears to be steadily gaining ground. Apart from promoting the use of information communication and technology in every sector of the economy, the educational institutions receive a fair share of the government’s funding and administrative support. In March 2002, the Egyptian government, in collaboration with UNESCO, organized a successful technology workshop for Egyptian high school teachers. The main objective of the workshop was to provide technology skills to teachers that were deemed essential in teaching science and mathematics in the high school (Gholam, 2002). In Uganda, the Connectivity for Education Development, a project sponsored by the Bureau Leland Initiative and the USAID Global Bureau LearnLink, is designed to help primary and secondary school teachers acquire computer skills necessary to be competent users of technology in the classroom. Eight of the 45 teacher training institutions were selected for pilot training programs in 2002. The teachers were trained to use several computer programs including Microsoft Word, Microsoft PowerPoint, Microsoft Access, and Inspiration. The teachers also had training in online collaboration, electronic mails, and Web page development. By the end of 2003, 1,902 teachers from the selected teacher training institutions had received technology training. Among the activities undertaken were:

1. Training the three Kyambogo University (then the Institute of Teacher Education Kyambogo (ITEK) core staff;
2. Computer-assisted teacher training course development;
3. Local office and multimedia development laboratory set up;
4. User laboratory/training laboratory set up;
5. Refurbishment and equipping of computer laboratories in primary teacher training colleges (PTCs);
6. Internet connectivity;
7. Public and private sector participation; and,
8. Professional development computer training.

(Connectivity for Educational Development, 2003)

In spite of the efforts of all the groups mentioned above (and those not mentioned in this paper such as Microsoft Partners in Learning and Intel’s Teach to the Future), the integration of technology in the curricular of schools in Africa has been very slow, unreliable and in some cases very disappointing. Some students and teachers in many elementary and high schools in several countries in Africa have never seen a computer or used the Internet (Cawthera, 2001). Many of the teachers who use technology in the schools mastered the skills on their own with the help of others. Over 60 percent of the schools have no access to telephones, television or radio sets. This is especially the case in remote and rural areas on the continent (Jensen, 2003). Asking such schools to make the necessary adjustments to embrace technology into teaching and learning will be like erecting a tent to cover the entire sky. In the next section some of the major problems hampering the integration of technology into the curriculum in the schools in Africa will be examined.

The Challenge of Integration

As already pointed out, many educational reform activities on the continent of Africa during the last decade have in no measure promoted the integration of technology into teaching and learning. This change of trends in educational development...
in Africa is due primarily to the fact that educational planners share the view of Bitter & Pierson (1999, p.5) that the educational sector is a force that, when functioning properly, promotes literacy or, when failing, causes illiteracy, regardless of policies and practices. Africa’s high illiteracy rate is a major problem for development on the continent. Technology is seen as a tool that can help distribute educational facilities to all parts of the continent. Therefore, many educational planners in Africa want to take advantage of technology to accelerate the pace of literacy on the continent. However, as compared to other regions of the world, Africa as a whole solidly remains behind the digital wall. This is the result of several factors that for years have combined to make Africa, in many respects, the poorest continent on the face of the earth (Otuka, 2003). These problems include poor infrastructure, poverty, unreliable telephone systems and energy supply.

In nearly all countries in Africa, urban as well as rural, many schools do not have secure buildings to house school property. Many of the school buildings are in such a poor state that at the end of the day, school principals and teachers carry important school property home. Some of the school buildings have no doors or windows. Some teachers teach their classes under poorly erected structures or sometimes under trees. Because of this, in some of the schools, parents encourage their children to bring home their chairs, tables, and books at the end of the school day, for lack of security. In such poor schools, technology will not be a priority for any one working there.

Where the buildings meet minimum security standards, there may not be electricity or telephones connected to the schools. Such buildings require huge capital to implement technology in the curricular of the school system. Where the buildings meet minimum security standards, there may not be electricity or telephones connected to the schools. Such buildings require huge capital to implement technology in the curricular of the school system. The start-up costs for technology in schools like these may demand a large share of the education budget for the school district. In a continent where the education sector is the first to suffer from budget cuts during financial crisis or sometimes in normal budgeting seasons, most of the time, parents and other significant people in a community are asked to bear the full burden of refurbishing school infrastructures so as to make them modern enough to meet the standards required by technology integration (Cossa & Cronje, 2004). In Mozambique, South Africa, Ghana, Botswana, and Nigeria parents and other significant people in the school community have come together to assist several schools become equipped with technology tools to facility teaching and learning.

“This vivid description of poverty and equity in the distribution of technology in rural or poor and urban or rich schools in Africa does not instill hope in many of us.”
Poverty appears to be a problem for all governments in Africa. Poor rural communities can hardly generate enough funds to support the efforts of local governments to provide adequate facilities such as technology for teaching and learning. Students in many rural communities walk over 3 miles everyday to attend school. Roads are either poor or non-existent. Some of these rural communities had hardly been touched by modern amenities such as telephone, television sets or electricity. Some “have never made a phone call and don’t live within easy walking distance of a telephone” (Association for Progressive Communications and Communication Rights in the Information Society, 2003, p.24). These facilities are essential for the development of educational technology in a school.

Commenting on poverty and equity in technology distribution in the developing world, this is what Hernes (2002) had to say about the situation in Africa:

Bissau has more than 95% of the telephone lines in Guinea-Bissau, and Freetown has more than 85% of the lines in Sierra Leone. A majority of villages ... lack electric power, let alone Internet connectivity. Elsewhere there has been a gradual deterioration of public services ... access is poor, functioning is irregular, prices are high, and service is scanty. (p. 24)

This vivid description of poverty and equity in the distribution of technology in rural or poor and urban or rich schools in Africa does not instill hope in many of us. For instance, in Zimbabwe, whereas poor high school have to do with old refurbished computers with unreliable or no access to the Internet, some urban rich schools have modern computers installed in air conditioned computer laboratories with full access to the Internet (Cawthera, 2001). The same situation can be seen in South Africa, Ghana, or Egypt and other urban schools on the African continent.

In the face of the above problems, what can countries in Africa do to bridge the digital divide in order to accelerate the pace of educational technology in the schools on the content?

Haddad & Jurich (2002) and Mehlinger & Powers (2003) offer suggestions for all governments in Africa including:

- Preparing a vision and mission statement;
- Preparing leadership for technology;
- Investing in infrastructures;
- Revise the teacher education curriculum;
- Reviewing fiscal policy to favor educational and nonprofit use of technologies;
- Deregulating telecommunication monopolies while protecting educational use of telecommunications;
- Reorienting funding policies to serve students, rather than institutions;
- Funding technology-mediated projects directly or encourage these projects through tax relief and other benefits;
- Funding projects that ensure access to technology for underrepresented populations;
- Promoting teacher training that uses technology to familiarize teachers with these tools; and,
- Implementing standards of quality for distance education courses.

Conclusion

This paper has made it clear that implementing technology in all classrooms in the schools in Africa is an enormous task. At the same time, the benefits are such that educational planners cannot overlook a project that has the potential of changing and restructuring the educational system to be more responsive, relevant and effective in meeting the needs of the people of Africa (Cradler, 2003).

By all standards, integrating technology into the curricular of the elementary and high school systems in Africa is a complex process. However, as Dhanarajan (2002, p.74) has pointed out, global “experience already is beginning to demonstrate what is possible, how it is done, and what tools can be applied to the task.” This implies that educational planners in Africa should not take a detour but stay the course to create enabling infrastructure environments to complete an educational mission that, at the moment, appears to be impossible.

Dr. Ofori-Attah is an Associate Professor of Education at Cumberland College.
References


References continued


Endnotes

1 Morocco had 3 schools, Nigeria had 2, Egypt had 2 and the rest, one school each. The beneficiaries of these schools included Angola, Botswana, Burkina Faso, Gabon, Gambia, Ghana, Guinea, Kenya, Lesotho, Malawi, Mali, Mauritania, Namibia, Ethiopia, Niger, Sierra Leone, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe.
Public Private Partnerships (PPP) For Economic Development:

A Case Study of Botswana Development Corporation (BDC) Limited

By Professor N.S. Bonu, PhD

Introduction

A Public Private Partnership (PPP) is the collaboration between public bodies such as central government or local authorities, and private companies in a joint venture for development of an economic activity. “Instead of governments borrowing to fund capital spending on infra-structure such as buildings, roads and hospitals, it involves the private sector” (Australian, 2003). Public private partnership is the best way to improve public services, it is better run than a bureaucratic setup, securing excellent management skills and financial acumen. It creates better value for taxpayers. Public private partnership is a hybrid product of total privatisation and Private Finance Initiative (PFI).

In privatisation, public ownership is transferred to private organisations whereas in PFI, the task will be handed over to the private contractors who meet the costs and then lease the finished project back to the public sector. PPP is neither total transfer as privatisation nor contracting out as PFI. In this case, Public and Private sector partners collaborate. Both have stakes in the project. Both contribute

“Public private partnership is the best way to improve public services, they are better run than a bureaucratic setup, and they create better value for taxpayers.”
share capital, management skills, etc. for the success of the project.

**Literature Review**

Jane et al (2003) published a series of articles related to these partnerships which embraced a variety of manifestations and issues emerging in such arrangements. Jody (2000) focused on the implication of PPP in the services funded by the government and further discussed the benefits of PPP in shared governance.

Many countries around the world have effectively implemented PPP. The United Kingdom was the first to adopt PPP in the 1990s (Wallis, 2002). Hong Kong wanted to follow this example because in Britain PPPs “are at the heart of the government’s attempts to revive public services. In January 2002, a Scottish fire service became the first in the country to consider the use of these partnerships (BBC News)” and the Government of Ireland identified PPP in its National Development Plan 2000-2006 as essential in delivering the needed infrastructure required on the national road network (National Road Authority, 2004).

The Government of Australia is pushing for public-private partnerships and is trying to coordinate a national response to this issue (Australian, 2003).

In view of the inadequacy of the public services provision in India, it was suggested to use private money to fund public services through these partnerships for faster completion of the projects (Rediff. Com. India, 2003).

According to the Canadian Auditor General, PPPs are more expensive and stated “that accountability for quality of services and cost containment will be reduced and costs to taxpayers will be higher than they would have been if the hospitals were built in the traditional manner of public tender, private construction, and public ownership and operation” (Toronto Star, 11/30/2002). However, the Minister for Health defended the partnerships stating the cost per patient is lower than in total government involvement hospitals (Toronto Star, 12/03/2002).

It is cautioned that PPPs are subject to the unstable industrial relations environment (Wilson, 2002).

It is seen that many countries experimented with privatisation, contracting out and partnerships. There are merits and demerits to each arrangement as instruments for economic development of any country, more so for developing nations like Botswana. The PPP system is not directly experimented in Botswana and so far no author has provided research on the issue of PPP in Botswana. Hence, it is the aim of this paper to fill the existing gap in the literature.

**Research Problem**

In a developing nation like Botswana, there should be special institutions with a mission to provide excellent service activities which are profitable and contribute to the economy of the country. Traditionally, these activities were provided by the Government of Botswana. Soon after its independence (1966), the Government of Botswana took a policy decision to invite private participation in service and business ventures. With this mission in mind the Government of Botswana planned to create a development corporation to become the country’s main agency for commercial and industrial development. This corporation was to be different from other government public sector undertaking in its setup, organization, management, delivery and development. It was also to depart from the total control of the Government and invite private partnership with the corporation. With these objectives in mind, Botswana Development Corporation Limited (the Corporation) was established in 1970 wholly funded by government, with the main objective “to assist in the establishment and development of commercially viable businesses in Botswana” (BDC, AR 2002:2). The Government of Botswana reiterated in its strategy for development of industry and commerce the need for joint ventures with the private sector through the Corporation and Ministry of Finance & Development Planning (MFDP, 1979). It was the aim of the Government that the Corporation should become a vehicle for government involvement in certain ventures (MFDP, 1985) and to invest in venture capital through BDC in the private sector (MFDP, 1991).

The Corporation invites private partnership in the commercially viable business projects with the private sector contributing at least 25% of the
total project cost including the working capital and management participation; effectively a public private partnership. As mutually balanced roles and activities among state, market and society are needed to underpin effective development of any system (Paul and Harry, 2001), it is the aim of the paper to study the roles and activities of these partnerships, to pinpoint the route followed in the Botswana Model and to study the success of the Botswana Development Corporation Limited as a case study.

Objectives of the Paper
The main objectives of the paper are:
- To evaluate the administrative aspects of these partnerships;
- To examine the Botswana Development Corporation in particular;
- To study the methods followed such as equity participation, loan financing etc.;
- To appraise other activities of the Corporation other than provision of direct funds; and,
- To debate the influence of these partnerships over the economic development of the country.

Hypotheses
H1: BDC adopts a mono-system of PPP.
H2: Agriculture as a backbone of the country attracts wider private sector participation; industrial sectors and property management sectors require a huge capital base, hence more government participation will be traced out and in each service sector the affiliated system will be found.
H3: Subsidiary type of participation is more attractive than other types such as associated and affiliated participation in public private partnerships.
H4: Public private partnerships will not add the needed value for the economy of the country.

Methodology
The organizational, administrative and operational aspects of the Botswana Development Corporation are benchmarked with the archives, administrative, review and annual reports of BDC. The Government of Botswana’s policy on these partnerships was examined and the National Development Plans were reviewed through to assess the views of the Central Government relative to the Corporation. The study period was restricted to the years 1999-2002 for the purposes of this study. As 1999 characterized the Corporation’s commencement of its Strategic Plan and introduction of fundamental changes in every aspect of operations (BDC, Annual Report 1999), it is taken as a base to project the trends of the rest of the period up to 2002. The published annual reports 1999-2002 of BDC are extensively analysed and used in the research.

Botswana Development Corporation Limited
The Corporation was established in 1970 as Botswana’s main agency for commercial and industrial development. It was incorporated as a Public Limited Company under Companies Act of Botswana (1959). The Government of Botswana owns 100% of issued capital of the corporation. The main objectives of the BDC are to assist in the establishment and development of commercially viable businesses in Botswana taking the State to the market via partnership with private individuals and organizations. The Corporation supports projects that create employment and develop the economy of the country. It supports the viable business units which use locally available resources, produce products for export, foster links with the local industry and contribute to the development of the economy of the country.

It also provides services such as equity participation, loan financing and provision of commercial, industrial and residential property. BDC was the first to float the concept of a financial district at Fairground Office Park in 1990 which is now a center for financial services companies, law firms, and regulatory authorities (Gaolathe, 2001).

For the year ending 2002, the Corporation had partnerships with 94 companies in the service industry, property development and management, as well as in agribusiness (Senye, 2002).

Administrative Set Up of BDC
In order to appreciate the impact of the Corporation, it is necessary to review the administrative set up.
Table 1 (above) displays the administrative set up of the Corporation. Policy decisions are made by the Board of Directors and the Managing Director executes these policy decisions. International Financial Services Centre, Group Internal Audit and Human Resources Development Division are under direct control of the Managing Director. In addition with the assistance of General Managers of Business Development Department and Management Services Department, the Managing Director administers other divisions. The General Manager for the Business Development Department is responsible for Property Development & Management, Industry, Agribusiness & Services, Workout and Research & Public Relations Divisions. The General Manager for Management Services Department is made responsible to the proper functioning of the departments such as Financial Accounting, Management Accounting, Group Company Secretary, Risk Management and Information Technology. “The Business Development Department has an overall responsibility to market the products and services of the Corporation, identify, evaluate and monitor projects that fall under the Corporation’s sectors of participation” (BDC, AR 2002:15) and the Management Services Department “has operational responsibility for Management Services support to the Corporation. Such support is directed at ensuring that the Corporation delivers the highest level of customer service to its clients” (BDC, AR 2002:25).

Role of the Corporation in Partnerships

The Corporation contributes and lends to all sectors of businesses and provides a guarantee to the subsidiary, associated and affiliated companies (MFDP, 1997). It also plays a leading role in the “marketing of a range of selected, industry specific international financial services” (MFDP, 1997:142). It is made responsible to have sustainable economic diversification of agricultural products, product development, use of natural resources and creation of markets in Botswana and elsewhere.

The Corporation also provides assistance to medium to large scale enterprises by participating in equity and financing and provision of commercial, industrial and residential real estate. The Corporation’s model insists that the private sector partner contributes at least 25 percent of the total project cost (including the working capital).

Generally, the Corporation participates in two major areas namely, the provision of Capital and through the provision of real estate. The products are:

1) equity participation;
2) direct financing; and,
3) loan guarantees.

There are three types of PPP in BDC, i.e., PPP where the Government of Botswana plays a major role through financing and management (subsidiary type), where it undertakes less of a role (associated type) and where its participation is lending the private sector and giving needed directions. In addition to finance, BDC provides various types of services to its partners such as providing land, factory units, custom-built facilities as well as commercial and industrial development.
Table 2 highlights the Corporation’s participation (number of units) in the private sector. The types of participation are subsidiary (50% to 100% share capital contribution), associate (less than 50% share capital contribution) and affiliate (no share capital contribution but only loans).

Table 2 portrays the overall participation of BDC in the private sector. During the period of study 1999-2002, property management dominates in the subsidiary; industry takes major share in associate and affiliated companies.

In subsidiary type of participation, the property management sector recorded 57%, 54%, 59% and 59% in 1999, 2000, 2001 and 2002 respectively and followed by the service sector registering 13% in all years. The subsidiary type did not register a significant role in the agricultural and industrial sectors, registering between 6% and 10%. It is found that the private sector is shy to take active financial participation in the property management sector, hence; the Corporation contributes share capital to the subsidiary company ranging from 50% to 100%. Private sector participation as Associate or Affiliated Company in the industrial sector is worth noting. This

<table>
<thead>
<tr>
<th>Year</th>
<th>Sector</th>
<th>Subsidiary</th>
<th>Associate</th>
<th>Affiliated</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>1999</td>
<td>Agriculture</td>
<td>3</td>
<td>10</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Industry</td>
<td>3</td>
<td>10</td>
<td>9</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Services</td>
<td>4</td>
<td>13</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Property Mgt.</td>
<td>17</td>
<td>57</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Not consolidated*</td>
<td>3</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>30</td>
<td>100</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>2000</td>
<td>Agriculture</td>
<td>3</td>
<td>10</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Industry</td>
<td>3</td>
<td>10</td>
<td>10</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>Services</td>
<td>4</td>
<td>13</td>
<td>7</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Property Mgt.</td>
<td>17</td>
<td>54</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Not consolidated*</td>
<td>4</td>
<td>13</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>31</td>
<td>100</td>
<td>22</td>
<td>100</td>
</tr>
<tr>
<td>2001</td>
<td>Agriculture</td>
<td>2</td>
<td>6</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Industry</td>
<td>3</td>
<td>9</td>
<td>9</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>Services</td>
<td>4</td>
<td>13</td>
<td>6</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Property Mgt.</td>
<td>19</td>
<td>59</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Not consolidated*</td>
<td>4</td>
<td>13</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>32</td>
<td>100</td>
<td>22</td>
<td>100</td>
</tr>
<tr>
<td>2002</td>
<td>Agriculture</td>
<td>2</td>
<td>6</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Industry</td>
<td>3</td>
<td>9</td>
<td>9</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>Services</td>
<td>4</td>
<td>13</td>
<td>6</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Property Mgt.</td>
<td>19</td>
<td>59</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Not consolidated*</td>
<td>4</td>
<td>13</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>32</td>
<td>100</td>
<td>22</td>
<td>100</td>
</tr>
</tbody>
</table>

*The Companies have not been consolidated because they are either non-operational or recent financial statements are not available  (Source: Compiled from Annual Reports of BDC for 1999-2002)

Table 2
analysis reveals that the private sector is more committed for the development of industries than agriculture, services and/or property development.

In 1999, the Corporation partnered in 96 units, of which 30 were subsidiary, 20 units were associates and 46 units are from affiliates. Affiliated participation dominated in 1999, followed by subsidiary and associates. Participation in industry registers 43% followed by property management and development at 27%, services at 17% and agriculture at 10%. Agriculture is the least participated area in all types of companies, industry is the highest participated activity in associate and affiliated type of companies and property development dominates in subsidiary type. The same pattern is located for the rest of the study period. As Botswana is confronted with frequent droughts and generally low rainfall, no private sector partner is forthcoming to participate in the subsidiary type of companies where the Corporation (public sector) is going to contribute the maximum equity capital and takes maximum risk.

### Investment Capital and Loan Contributions to Private Companies

As stated earlier, the Corporation’s contribution to share capital to private companies varies from 50% to 100% in case of subsidiaries and less than 50% to associate companies and only loans to affiliated companies.\(^1\)

Table 3 displays the units’ participation in percentage of share capital and loans by year.

In 1999, out of the total share capital contribution of 535BWP\(^2\), 56% of share capital went to associated companies and the rest to subsidiary companies. 29% of companies have 100% participation in share capital and 15% companies have 50%-99% share capital contribution. Majority of loans are given to affiliated companies followed by associated companies. The analysis of overall contribution towards share capital and loans reveals that associated companies received maximum financial assistance followed by subsidiary and affiliated companies.

In 2000, 100% share capital contribution to subsidiary tops the list by registering 48% followed by associated with 43%. In case of loans, affiliated companies secured the largest percentage (45%), followed by associated companies (35%), and subsidiary companies (16%). Here again, associated companies secured more financial assistance followed by subsidiary and affiliated companies.

In 2001, subsidiary companies with 100% share capital contribution top the list (40%), followed by associated companies. In the case of loans, associated companies registered maximum with 38% followed by affiliated companies (36%) and subsidiary companies. For the third consecutive year, companies attracting the maximum financial participation of the Corporation was associated companies securing a share of 38%, followed by subsidiary and affiliated companies.

2002 registers more share capital contributions in associated companies followed by subsidiary companies. Surprisingly, one hundred percent subsidiary companies are given maximum loans (43%), followed by affiliated (41%) and no loans are given for associated companies. The overall analysis of the financial participation of the Botswana Development Corporation with the private sector reveals that subsidiary companies secured maximum financial assistance followed by associated companies.

The analysis of the share capital contribution reveals that in two years (1999, 2002) associated companies received a larger percentage of share capital. In 2000 and 2001, subsidiary companies received a larger percentage of share capital. In the case of loans, affiliated companies received a larger percentage in 1999, 2000 and 2002. And in 2001, associated companies received the largest percentage of loans.

### Agriculture

In this sector the highest contribution was from the subsidiary type arrangement, registering 77%, 80%, 69% and 75% respectively in years 1999, 2000, 2001 and 2002. This analysis confirms that there is only one way left for the agricultural development in the country, i.e., public sector. The private sector is not risking their capital.

### Industry

Associated companies topped the list for the industrial finance in all years registering 51%, 55%, 53% and 50% in the years 1999, 2000, 2001 and
2002 respectively. The private sector is very interested in the industrial sector, and that this is an indication that the Corporation supports their participation.

Service
Except in 1999, all years registered maximum financial participation in associated arrangement companies.

Property Development
In the same year, affiliated companies received the maximum financial support. It is an indication, that both associated and affiliated companies are being developed in the service sector, therefore a true growth sector.

### Table 3
PPP by BDC showing Share capital contribution and loans to Private Companies

<table>
<thead>
<tr>
<th>PPP</th>
<th>Share Capital</th>
<th>Loans</th>
<th>Total Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>%</td>
<td>(P000)</td>
<td>%</td>
</tr>
<tr>
<td>1999</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>100</td>
<td>158743</td>
<td>29</td>
</tr>
<tr>
<td>6</td>
<td>50-99</td>
<td>77864</td>
<td>15</td>
</tr>
<tr>
<td>20</td>
<td>&lt;50</td>
<td>299173</td>
<td>56</td>
</tr>
<tr>
<td>46</td>
<td></td>
<td>208783</td>
<td>48</td>
</tr>
<tr>
<td>*3</td>
<td>954</td>
<td>00</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
<td>534534</td>
<td>438559</td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>100</td>
<td>202182</td>
<td>48</td>
</tr>
<tr>
<td>2</td>
<td>50-99</td>
<td>35809</td>
<td>08</td>
</tr>
<tr>
<td>22</td>
<td>&lt;50</td>
<td>181666</td>
<td>43</td>
</tr>
<tr>
<td>36</td>
<td></td>
<td>198590</td>
<td>45</td>
</tr>
<tr>
<td>*4</td>
<td>3736</td>
<td>01</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>89</td>
<td>423393</td>
<td>440820</td>
</tr>
<tr>
<td>2001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>100</td>
<td>209127</td>
<td>40</td>
</tr>
<tr>
<td>6</td>
<td>50-99</td>
<td>70916</td>
<td>14</td>
</tr>
<tr>
<td>22</td>
<td>&lt;50</td>
<td>194094</td>
<td>37</td>
</tr>
<tr>
<td>31</td>
<td></td>
<td>193059</td>
<td>36</td>
</tr>
<tr>
<td>*4</td>
<td>45861</td>
<td>09</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>85</td>
<td>519998</td>
<td>541436</td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>100</td>
<td>157780</td>
<td>31</td>
</tr>
<tr>
<td>4</td>
<td>50-99</td>
<td>104070</td>
<td>20</td>
</tr>
<tr>
<td>25</td>
<td>&lt;50</td>
<td>208832</td>
<td>40</td>
</tr>
<tr>
<td>31</td>
<td></td>
<td>189288</td>
<td>46</td>
</tr>
<tr>
<td>*4</td>
<td>45861</td>
<td>09</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>86</td>
<td>516543</td>
<td>409483</td>
</tr>
</tbody>
</table>

Overall analysis reveals that the
The associated type arrangement is getting more attractive. The Government of Botswana should develop more of the associated type partnership; gradually weaning out subsidiary and loan types of finance where it takes the most risk.

The above analysis proves that public private partnerships, especially in associated type of companies as with the Botswana Development Corporation, is more desirable to the third world developing nations such as Botswana.

**Value Created and Economic Development by PPP through BDC**

The Corporation through partnerships has created value and contributed to the economic development of the country. “Its primary objectives are to develop infrastructure and create employment by providing capital to fund investment and economic growth in Botswana. While achieving those objectives, the Corporation also adds value to people’s lives by rewarding those who help in achieving its goals” (BDC, AR 2002:7).
Table 5 reveals that the partnerships added values of P72m, P89m, P66m and P75m respectively in years 1999 to 2002, made distributions to employees, government, shareholders and retained capital for further development.

The main source of value addition is interest on loans followed by dividends. This is a clear indication that the Corporation is gradually moving to share capital participation and reducing its loan participation.4

Overall, analysis of Table 4 reveals that the Corporation created value for the economic development of the country.

Botswana Development Corporation, through its participation with the private sector, could deploy significant capital and increased employment from 1999 to 2002. Except for 1999; it secured a positive return on capital employed (BDC, AR 2002). By encouraging the citizen participation in business ventures, fostering the linkages with the local industry, the Corporation has contributed to the economic development of the country.

### Conclusion and Suggestions

The research confirmed that there is little private sector interest in agriculture. This leaves only the public sector.

During the period of study 1999-2002, associated and affiliated systems of PPP were more prominent in the industrial sector. The analysis revealed that the private sector is more committed for the development of industries than agriculture, services and property development. This is an encouraging sign and

---

Table 5

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>(P000)</td>
<td>(P000)</td>
<td>(P000)</td>
<td>(P000)</td>
<td>(P000)</td>
</tr>
<tr>
<td>Interest on loans</td>
<td>69967</td>
<td>57273</td>
<td>43206</td>
<td>45042</td>
</tr>
<tr>
<td>Dividends</td>
<td>26908</td>
<td>35461</td>
<td>32834</td>
<td>43029</td>
</tr>
<tr>
<td>Sundry income</td>
<td>2247</td>
<td>7536</td>
<td>5986</td>
<td>4703</td>
</tr>
<tr>
<td>Profit on sale of investment</td>
<td>(15229)</td>
<td>0</td>
<td>1958</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>83893</td>
<td>100270</td>
<td>83984</td>
<td>92774</td>
</tr>
<tr>
<td>Less cost of supplies and services</td>
<td>12106</td>
<td>(16)</td>
<td>11577</td>
<td>(13)</td>
</tr>
<tr>
<td>Total value added</td>
<td>71787</td>
<td>100</td>
<td>88694</td>
<td>100</td>
</tr>
</tbody>
</table>
| Distributed as follows: &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&n

(Source: Compiled from Annual Reports of BDC for 1999-2002)
further partnerships should be developed using the associated and affiliated arrangements.

Subsidiary types of partnerships are more dominant in property and service sector compared to other associated and affiliated. This is an indication that these activities may not be profitable, hence private sector participation is weak. This requires further initiatives by government to stimulate private sector participation.

The analysis of value added revealed that the Corporation is gradually moving towards share capital participation and reducing its loan participation. Except for 1999; there was a normal distribution of value. An analysis of Table 4 revealed that the Corporation created value for the economic development of the country. In the long run, it may be advisable to decrease share capital participation and increase the affiliated arrangement.

The traditional system of State Administration, where the State took total responsibility for the country’s development is outmoded and may be effectively replaced by public private partnerships. The success story of Botswana Development Corporation from loss lending (P97.7m loss in the year 1999) to profit (P78.3m profit in 2002) generation is an encouraging sign to develop further partnerships using the affiliated arrangement.

References


Companies Act of Botswana. (1959): (Cap 42:01)


Senye, V.J. (2002). Business Development Department: Overview of the General Manager of BDC.


Endnotes

1 In addition to share capital, the Corporation also contributes to loans for subsidiary and associated companies.

2 Botswana Pula

3 36%, 41%, 39% and 40% respectively in the years 1999, 2000, 2001 and 2002

4 Value added is distributed to employees as pay roll costs, payment of interest on loans borrowed, retention of profit, etc. In 1999, the Corporation had used more than the value created for development purposes. There was normal distribution

Dr. Bonu is a Professor in the Faculty of Business at the University of Botswana, Gaborone.