

Dichotomy or Continuity: The Relationship between Higher, Secondary and Primary Education in Africa. The Case of Botswana

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Introduction:

The twenty first century marks a crucial phase in the development of education in Africa. Many African countries are facing numerous problems – most of them relating to the financing of higher education and increasing student populations. In Botswana, the turn of the century has seen a phenomenal increase in the number of secondary school leavers in demand of tertiary education. This scenario has presented immense challenges to policy makers in the country because the current single university, several colleges of education, nursing institutions and vocational centres cannot cope with this massive increase. The quality of education offered at different levels, primary, secondary and tertiary is also of paramount importance if the country is to meet the global challenges of the 21st century.

This paper examines the relationship between Botswana's primary, secondary and tertiary education. The major objective is to establish the relationship between the primary and secondary school curriculum and that of the highest institution of learning in the land - the University of Botswana. It discusses the nature, form and content of the curricula at primary, secondary and university levels. It proceeds to examine the role that the university can play in the new millennium in terms of enabling the primary and secondary categories to meet its requirements. The paper shall discuss the role that the university should play in the new millennium in the training of teachers, especially in its dealings with the affiliated colleges of education. The role of the university in ensuring quality assurance at colleges of education (the trainers of some of the teachers) for primary and secondary schools and the role that the university should play in developing a relevant curriculum in Africa generally, and in Botswana in particular, shall form the last section of this paper.

a). National Policy on Education

The university of Botswana, like other universities in the world is expected to fulfill certain core objectives, whether it be in the past, or in the twenty first century. These are; the production of highly skilled manpower through teaching and learning; to carry out essential research; to develop and apply new knowledge for the benefit of the society and provide the public with service through consultancies. (ESAURP, 1987: 11). In its development plan which focuses on the first few years of the new millennium, the

university of Botswana sets out policies and plans which seeks to achieve these broad objectives (University of Botswana, National development Plan 1997/98 – 2000/2002).

In 1992, the President of the Republic of Botswana appointed a National Commission on Education to, “conduct a broad ranging review of the entire education system, with particular emphasis on universal access to basic education, vocational education and training, preparation and orientation towards the world of work, *articulation between the different levels of the system* (my emphasis) and a re-examination of the entire education structure.” (Report of the National Commission on Education, 1993: 11). This commission produced crucial recommendations, some of which have been adopted by government and are shaping the current educational development of the country.

Since independence in 1966, it has been noticeable that there was no congruence or articulation between different levels of Botswana’s educational system. The primary school curriculum did not articulate well with the secondary level. For a long time, subjects such as agriculture and science were not taught at primary level. They were only introduced at junior secondary level (3 year Junior Certificate). With the approach of the new millennium, a curriculum blueprint was produced which intended to link primary education with secondary and tertiary education. This blueprint’s basic education philosophy aimed at promoting the development of an individual in all spheres, promoting intellectual growth and creativity, and preparing the people of Botswana for life in the 21st century. These would be essential in achieving the national goals of sustained development, rapid economic growth, economic independence and social justice (Curriculum Blueprint: Ten Year Basic Education Programme 1999: 1-2).

b). The Basic Education Programme: Primary and Junior Secondary School Levels

The basic education programme was to be achieved in nine years, seven years of primary education and three years of junior certificate. Certain aspects in the education system were considered essential in order to develop a fully productive individual in the 21st century. These were skills relevant to work situations such as decision making, problem solving, teamwork and computing. In addition, vocational and practical subjects were to be given added impetus. These would equip recipients of Botswana’s basic education system with manipulative skills, the ability to demonstrate these skills and also apply concepts in practical situations. Commercial, business oriented and computer studies were also envisaged and considered essential if recipients of the country’s education were to successfully meet the challenges of the new millennium.

At the primary school level new subjects such as music, physical education, design, art and craft, environmental science were emphasized and recommended and the commission argued for their immediate introduction. These recommendations were accepted by government. The primary curriculum emphasizes the creative and performing arts such as design and technology, art, craft, home economics and business studies. In the languages, it stresses the development skills of debate, distinction between formal and informal spoken language, and the reading and writing skills. At the end of

the primary level, the curriculum maintains that pupils should be able to demonstrate some decision-making skills. In science, primary school leavers should understand basic principles of science, recognize nature and the limitations of science, and acquire physical skills useful in that subject. In mathematics aspects of geometry, problem solving and algebra were to be instilled. It is clear that the curricula at this stage does not mention any components concerning ethno-science and cultural studies.

At junior certificate level, there is a high level of continuation from primary education, albeit with more elaboration and the introduction of new subjects. The objectives of the junior secondary curriculum are intended to prepare students for further education and productive life in society. The goals of the curriculum are to establish a solid foundation in mathematical skills, to enable students to understand scientific and technical subjects and to orientate pupils towards work in the real world. The goals of the new curriculum requires students to be able to; use their national language, Setswana and English proficiently as tools of communication, study, and work; use computer applications in a practical setting; understand scientific concepts and their use; appreciate the value of technology and the use of tools and materials; acquire computer literacy; be able to think critically, and acquire problem solving skills and understanding of business and daily commercial transactions (Report of the National Commission on Education, 1993: 157-158). In the new curriculum, students are required to take a minimum of eight and a maximum of ten subjects. Each student has to take six core subjects, namely, english, setswana, social studies, mathematics, integrated science and design and technology. All students must take a compulsory basic computer awareness course. Practical subjects in the curriculum include home economics, agriculture, commerce, principles of accounts/bookkeeping and office skills. General studies subjects comprise of development studies, religious and moral education, art, music and physical education (Report of the National Commission on Education, 1993: 157-158). It is noticeable therefore that the current curriculum for junior secondary schools and primary schools to a large extent articulate well. The practical and commercial oriented subjects such as agriculture, home economics and science are emphasized at both levels. With the resurgence of globalization, science and technology are considered to be essential ingredients of development. Technological studies such as design and technology and science are crucial for a developing country and the inception of such studies at primary level and continuation at junior certificate level indicates government's awareness to the challenges of the 21st century. The acquisition of computing and vocational studies is also an essential requisite of the new millennium, and their place in the lower rungs of the educational level is a commendable measure.

c). The Senior Secondary Curriculum

The philosophy of the senior secondary school education is to prepare Botswana for a change from an economy based on agriculture to one based on industrial development. The aim of the senior secondary component is to build on the foundations of the Basic Education Programme (primary and junior levels) and orientate students towards further education and work. It also seeks to prepare citizens to be able to participate in the future development of the country. The two-year senior secondary school curriculum is

diversified and it encompasses academic, technical and commercial subjects. It is much more practically oriented and it inculcates skills essential in practical life. The curriculum prepares students to work in industry, and has a strong guidance and counseling component.

The objectives of the senior education programme are to provide a continuation from the basic education programme and lay a foundation for further education and training. It intends to; develop attitudes, values, and skills required for socio-economic development in a rapidly changing society; provide opportunities for learners to develop technological skills that are related to the world of work, and to provide opportunities for learners to develop information technology skills to allow them to use technologies for their benefit and that of society at large (Report of the National Commission on Education, 1993: 2).

At the end of the two year programme, the system intends to have achieved the following aims: to have developed skills to assist students to solve technical and technological problems they face in daily life; developed attitudes which are sensitive to interacting with the environment in a protective, preserving and nurturing manner; acquired knowledge attitudes and practices to ensure good family and health including awareness and management of epidemics such as HIV/AIDS; developed an understanding and acquired skills in business and everyday commercial transactions and entrepreneurship; developed study skills required for further study and training and lastly to have developed critical thinking, communication and problem solving abilities. It is prudent to introduce health awareness issues at this level, since HIV/AIDS is a major problem of many countries in sub-saharan Africa as indicated elsewhere (Tabitha Sewe: 2002).

The senior secondary programme is organized around two broad areas. These are a core area and an optional area. The optional area has four subgroups. In the core area, the subjects offered are English, setswana and mathematics whilst the optional area is made up of the humanities and social sciences subjects such as history, geography, social studies, development studies and English literature. The Science group of subjects comprises of single Sciences, such as domestic science, chemistry, physics, biology, and the creative and technical area has design and technology, art, food and nutrition, computer studies and business studies. The enrichment area is made up of physical education, music religious and moral education.

There is thus, to a large extent a degree of articulation between the goals and aims of the basic nine-year primary and junior secondary programmes with the senior programme. The introduction and emphasis of technical subjects, computing and vocational and scientific subjects, is emphasized at both levels, although the emphasis and elaboration deepens as one progresses to higher levels. Most of the subjects taught at the junior level are continued at senior secondary level. Computer studies have just been introduced and it shall take sometime before the area is firmly established. The core subjects emphasized at the junior secondary level such as mathematics, English and science are still viewed as essential at senior secondary level where the syllabus emphasizes firmer grounding on them.

At both junior and senior secondary levels the continuity of the system and its desire to meet the challenges of the 21st century is shown by the fact that aims and objectives at both levels emphasize that education should respond to changes in the economy and society. The emphasis and inclusion of the humanities and social science subjects at both levels is intended to develop the moral, social and cultural values of society. The need to develop and promote the use of English and Setswana as mediums of instruction are both in line with promoting cultural values and the ability to communicate internationally in a globalizing world. However, as it shall be revealed, the education curricula at the different levels has neglected African knowledge systems and other cultural aspects of the country.

d). Curricula at the University and Teacher Training

The highest level of education in many countries is the tertiary section, and here, universities have been the main providers of that form of education. Universities around the world train specialists in almost all fields and as their graduates are future leaders of society, it is expected that their graduates should be of “high intellectual caliber” (ESAURP, 1987: 15). Universities should release graduates who are independent thinkers capable of adopting and adjusting quickly to new and emergency situations. In the developing countries of Africa, universities are crucial instruments in development. Universities should develop critical thinkers who are responsive to the development needs of their countries. The curricula of African universities should therefore continue to emphasize the developmental and problem solving needs of their countries. As Butts rightly asserts, ‘African universities must respond effectively and quickly to challenges in order to avoid ...pernicious dichotomies ... sharp distinctions and gaps between primary education and secondary education and universities’. There is need for “congruity among several levels and branches of education so that they show closer agreement in purpose and better integration in practice.” (Butts, 1964: 3). This section shall proceed from this pivotal statement by Butts to examine the role of the university of Botswana in ensuring that dichotomies, distinctions and gaps do not exist in the educational system of the country in the new millennium.

Similarly to other African countries, Botswana is facing serious challenges of development and how to adapt to the changes and demands of the 21st century. The University of Botswana shoulders the responsibility of ensuring the development of the country’s people and by implication the social, economic, cultural and political development of the country. Higher education is very critical to the well-being of all countries and this has been noted by Kim, who maintains that it is indeed a pre-requisite for national development (Kim, et al, 1980: 3). In Botswana, the Report of the National Commission on Education made some critical observations on the relationship between secondary education and degree programmes at the university of Botswana and how the two programmes may best be reconciled. The commission noted that the quality of university entrants depends not only on the senior secondary school leavers, but also on the foundation laid in primary and junior secondary schools (National Commission on Education: 12) This part of the paper seeks to evaluate whether there is a continuum

between primary and secondary education and university education. The vision and mission of the university of Botswana is to: be the leading academic center of excellence in Africa and the world and to advance the intellectual and human resource capacity of the nation and the international community. The university intends to fulfill this vision and mission by among others; offering quality academic and professional programmes that ensure a commitment to, and a mastery of life-long learning skills as well as encouraging a spirit of critical enquiry; developing a student-centred, intellectually stimulating and technologically advanced teaching, learning and research environment; producing graduates who are independent, confident, self-directed, critical thinkers and professionally competent; and providing leadership in responding to the nations cultural economic, political scientific, social, technological and industrial needs (University of Botswana, Vision, Mission and Values). Nationally, the vision, values and mission of the university articulate well with the nation's blueprint for the future – vision 2016 which calls for the creation of an educated and well-informed nation by that date.

The university of Botswana has six faculties which offer different disciplines ranging from the humanities to the sciences. These are the Faculty of Humanities, the Faculty of Science, Faculty of Education, Faculty of Social Sciences, Faculty of Business and Faculty of Engineering and Technology. The university offers certificates, diplomas and degree courses and produces degree holder graduates as secondary school teachers. The university curricula offers almost all subjects that are also taught at secondary and primary schools in its Bachelor of Arts, Bachelor of Education (primary and secondary) and Bachelor of Science programmes. It trains graduates who specialize in different subject areas and these are channeled to the primary and secondary schools. The faculties of education and humanities are the ones that have major links with the primary and secondary education levels in Botswana. The faculty of education plays a pivotal role in the education provided at the two levels because it offers courses that equips graduates from other faculties with the practical aspect of teaching the acquired theory. It is at this stage that qualified and professional teachers are produced. It introduces graduates from other faculties who are going to be teachers to curriculum and guidance and counseling courses. It is at the post graduate diploma in education level that graduates are equipped with pedagogical skills that are essential for teaching.

The university of Botswana has, and continues in the 21st century through its department of Mathematics and Science Education (DMSE) to discharge its mission by providing programmes for the preparation of mathematics and science teachers for the country's primary and secondary schools. As from the academic year 2002/2003, the university shall prepare graduate teachers in mathematics and science and relegate the diploma level preparation of teachers to the colleges of education. The university of Botswana through its faculty of education has, and shall continue in the new millennium to enroll primary school teachers who do not qualify for direct entry into the university. The department of primary education has designed a scheme which permits these teachers to register and enroll into programmes designed and offered by the department through the mature age entry scheme. This scheme is based on the fact that these teachers already have experience as primary school teachers and hence they qualify to enter the university. This

is one way of promoting the concept of continuous life-long learning and also reducing the dependence of the university on the traditional new entrants – the secondary school leavers.

The programmes offered to these teachers are designed to upgrade the content and pedagogical knowledge of the said teachers in different subjects. The teachers would graduate with B.Ed degrees and return to primary schools as teachers or teachers with responsibilities such as guidance and counseling. The university also provides further training for teachers with diplomas from both the secondary and primary schools to further their educational development and training (personal communication with Dr. D. Mapolelo). This is a crucial aspect which facilitates enrollment and human resource development of these cadres. Otherwise they would not be admitted through the other (normal) entry university requirements, a drawback to improving the quality of education at primary level. The university is striving and shall continue to prepare flexible and adaptable teachers for primary and secondary schools through continuing and lifelong education. This is very essential because as Akimpelu observed, scientific, technological and socio-economic and political changes ‘render old methods grossly ineffective and uneconomical’. By being continuously exposed to learning in their professions, teachers in primary and secondary schools develop ‘greater self-confidence, greater mastery of the professional techniques and greater readiness and adaptability in meeting new challenges’ (Akimpelu 2000: 32). Thus, the university assists and ensures the development and maintenance of quality in line with the modern challenges of a globalising world characterized by rapid changes.

The centrality of the university of Botswana in the development of education in this century has been stressed by the National Development Plan 8, which asserts that ‘Nationally, the university developed strong links with other tertiary institutions so as to ensure the maintenance of high academic standards’ (NDP 8: 355). All colleges of education in the country (primary and secondary) train teachers for the two levels, and all are affiliated to the university of Botswana. In this regard, the university, through its Department of Mathematics and Science Education (DMSE) shall continue to ensure that quality academic standards are maintained and reinforced by providing resource persons to assist mathematics and science teachers from colleges of education at subject seminars and workshops and provide moderators for examinations in mathematics and science (Personal communication with Drs. D. Mapolelo and A. Babugura). The moderation exercise enables the university to closely monitor the quality of teacher education. These include the selection of appropriate subject matter, appropriate assessment procedures and the quality of examinations (Rathedi: 2000: 50). Staff of the departments of primary education and mathematics and science education are members of mathematics and science panels of the Ministry of Education-Curriculum Development Unit. These panels develop materials for both primary and secondary schools. The university of Botswana shall continue to play a pivotal role in the education of the country because of the earlier mentioned position as an institution to which all colleges of education are affiliated. The university’s faculty of education and senate approves examinations and teaching practice results of trainee teachers from these colleges (Mapolelo 2000). Through these

interventions, the university influences and maintains quality in education at both the primary and secondary levels because these teachers are released into the two streams. This enables the university to make input on content and standards and link the two levels and further bring them closer to the type of education offered by the university itself. The outreach programme of DMSE in senior schools shall assist teachers in mathematics and science in the development and implementation of their respective curricula (personal communication with Drs. D. Mapolelo and A. Babugura). Thus, through its vast expertise in this field, the university shall continue to ensure that the appropriate and quality curricula for primary and secondary schools is in place. This expertise should ensure that appropriate content and instruction methods are applied at relevant educational levels and hence assist in achieving national goals as envisioned in vision 2016. In addition, specialists from different departments such as English, History and African Languages in the faculty of humanities should maintain representatives in the Ministry of Education's curriculum panels and in the new millennium, these subject specialists should be closely involved in all curriculum reviews for their input in the content relevant for the changing world

The university's broad mission, values and vision statements are very much in congruence with the broad national educational objectives. The aims and objectives of the curriculum at primary level and those at secondary level show a continuation and congruence with those of the university. The syllabuses and subjects taught at secondary school level are well catered for by the courses offered at the university and the aim of the whole education system in the end is to produce an independent, critical thinker who can apply technology and respond and adapt to changing realities of the 21st century with relative ease.

f) Dichotomies and Discontinuity in the Educational System

Although there seems to be continuity between primary, secondary and university education, there are also signs that there are discontinuities and that the two levels, primary and secondary levels do not articulate well in certain areas with the university system. This development has some implications for the enrolment of secondary school leavers at the university. The combination of subjects that can be taken at the end of the senior secondary school level in many cases make it difficult for students to meet the entry requirements set by the university for admission. There are instances of those students who would like to enroll in the social sciences in the Social Work degree programme and the Bachelor of Commerce being unable to meet the set entrance criteria. Some of these students would have passed their commercial and art subjects at secondary school, but fail to gain a credit in mathematics. Although guidance and counseling have been introduced at secondary schools, students cannot make informed choices in terms of some of their subject combinations and seem not to know what specialization or field they intend to enter after senior secondary education. Students end up being offered courses that they didn't intend taking. It has also been observed that the design and technology teachers trained at colleges of education and the university are not normally

the best senior secondary school performers in the science and mathematics fields. These school leavers who enroll for a diploma in colleges of education may not have taken the necessary mathematics and science at senior school. Rather, they may have taken other minor subjects such as music, social studies and physical education. This scenario weakens their design and technology content and practical experience. The high performers in mathematics and science at senior secondary normally enroll for the Bachelor of Science degree programme. This development results in the production of poor teachers being sent to senior secondary schools and in turn poor results by senior secondary school leavers. These teachers also perform poorly when they enroll for their degrees at the university as shown by the high failure rate. The high failure rate also obtains at colleges of education diploma level (Chalebgwa and Yandila 2000: 134-135.). In this regard, the university of Botswana should ensure that candidates with a strong mathematics and science component are enrolled for design and technology at the colleges of education. The high failure rate indicate lack of proper subject combination for prospective candidates in certain fields. The University can help lessen this problem by strengthening the component of careers, guidance and counseling at senior secondary schools and colleges, so that suitable candidates may be channeled into the badly needed high quality design and technology field (Chalebgwa and Yandila: 134). This would ensure articulation and continuation at all levels and quality assurance. The university should liaise closely with the senior secondary school system and colleges of education in order to ensure that students have a clear grasp of the entry requirements of the university's programmes to enable them to choose their subjects in a way that would fulfill their intended careers, and also facilitate the process of enrolment.

The method of instruction and degree of competence between secondary schools and the university also show manifestation of gaps and discontinuities. Some of the students admitted for science degree courses end up being dropped to diploma level and in some faculties students from senior secondary school have difficulties in adapting to the teaching methods used at the university. Students find it difficult to make their own notes and seem intent on memorizing the lecturer's lesson rather than understanding (personal communication with lecturers from the faculty of humanities, University of Botswana). This may be due to the fact that at senior secondary level teachers provide students with detailed notes and the main aim of instruction is to absorb as much as possible in order to pass examinations. As noted, one of the stated aims of the two-year senior secondary education programme is to prepare students for tertiary education and work situations. Whereas the primary system appears to prepare students for the junior secondary level (those who pass at primary because the ten year basic education system enables all primary school completers, even the dismal failures to proceed to junior level), the junior level similarly prepares them for senior secondary education, but, there is a dichotomy in the transition from senior secondary to university level.

g) The Curriculum and its Relevance

The university of Botswana, like other universities in Africa seems to over-emphasize scientific and technological studies. Whilst technology and science are very crucial for the development of Africa, the humanities and social science subjects should not be neglected. African indigenous knowledge systems have been neglected by African universities in their curricula. It has been observed elsewhere that there are very few universities with courses on ethno-science and ethno-mathematics and those are mainly in West Africa (Babugura:20). In the twenty first century, the university of Botswana and African universities generally should infuse ethno-studies in their curricula. In Botswana, the university should study, and conduct research on African medicinal practices such as working in conjunction with traditional healers organizations like Botswana Dingaka Association to advance traditional healing systems and blend those with western scientific practices. African scientific practices such as rainmaking (boroka) in Botswana and indigenous science and technology of crafts, iron working and pottery should be infused at all levels of the curriculum, from primary through to the university. The latter should play the key role of providing guidance and co-ordination of the different levels of the curricula because of its vast expertise and research.

African universities have not emphasized and concentrated on the use of local languages in their teaching and research. Writing on this phenomena, Nyamnjoh has rightly stated that, “Only a few African countries have bothered to adopt policies that encourage education in African languages, and even in their limited numbers have tended to confine the importance of local languages to primary and secondary school education, thereby accentuating the remoteness and irrelevance of universities to the bulk of the population.”(Nyamnjoh: 7). The university of Botswana, similarly to other African universities teaches the local language – Setswana in English. Other local languages besides setswana have been totally neglected yet there is a whole subject with numerous courses referred to as African languages. On the other hand, the National Commission on Education emphasizes the importance of teaching setswana at primary and secondary school levels. The university, with its vast expertise on the different African languages continues to use English in teaching African languages. This clearly indicates the remoteness of the university to local conditions, a situation that should be discontinued. In this century, African universities should mount fully fledged courses in African languages and African studies and take the lead in the promotion and development of indigenous knowledge instead of relegating these to the lower rungs of the education system or to western institutions.

Even today, African institutions of higher learning are heavily dependent on “ill-adapted curricula, sources and types of knowledge”, that have ‘alienated and enslaved’ those who acquired for the purposes of modernity (Nyamnjoh: 12). At the university of Botswana, major efforts should be undertaken to scrutinize all aspects of the curricula carefully and infuse the relevant components. There is need for indegenisation of the curricula laying

emphasis on indigenous knowledge and its generation and dissemination. This, can be achieved even with African scholars continuing, as Nyamnjoh noted, cooperating and collaborating with intellectuals from the developed countries.(Nyamnjoh: 12). Indegenasation and infusion of African cultural aspects into the curricula could bring relevance and stimulate research and the desire to acquire knowledge. A major problem facing the university of Botswana in this century is the lack of desire and enthusiasm for research and a culture of reading and learning by students(personal communication with lecturers in the faculty of humanities). This calls for a thorough soul searching by the university to find out if there is anything wrong or missing in the curriculum. The major problem of the lack of desire to read and research by students could, in part, be attributed to the remoteness and lack of relevance of the curriculum to the local situation. Therefore, the university should seriously consider a strong presence of African studies and knowledge systems. Failure to undertake these measures renders the noble aims, values and missions of both the university of Botswana and the lower levels of the education system meaningless.

Conclusion:

There should be close relationship between the university of Botswana instruction system and secondary system to ensure a smooth transition by students. The university is in a position where it can use its immense research facilities and its qualified and highly experienced expertise to liaise with secondary schools to ensure that school leavers would easily adapt to university instruction methods. The professional capacity of the university should be enhanced and used increasingly to conduct workshops, advice teachers and school administrators, conduct seminars and make a positive input in the instruction depth and scope of content and level of analysis at the lower levels. This would facilitate the transition form the lowest level primary, to the secondary level and finally to enrolment with the university. It is through this active intervention that the challenges of the 21st century can best be met. Generally, the African state should empower African universities through finance and legislation with the mandate to spread their horizon by imbibing curricula relevant to African needs and values. This could be one way of advancing the goals of the African renaissance in the 21st century.

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