

Full Length Research Paper

The role of higher education funding in national development

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Abstract

The role of the university in national development is the subject of much discussion in Africa today. History shows that most African nations established at least one national university immediately after independence. The major purpose for establishing universities was for the institutions to play a pioneering role in addressing issues of national interest. Higher education institutions have a mandate to be proactive in addressing social issues and this not only requires commitment but also resources. Higher Education findings have often been instrumental in kick starting such efforts through higher education training. The challenges faced by universities to contribute effectively to national development can be supplemented by external funding. This is demonstrated through two case studies of externally funded higher education projects at the University of Zambia.

Keywords: High Education, Funding, National Development.

INTRODUCTION

Higher education in Africa can be traced back to Egypt in the last two or three centuries BC and AD with the Alexandria Museum and Library and the monastic system (Ajayi et al., 1996). And, the modern African University as we know it today can be traced to the period between 1930 and 1960 when western education was viewed as a tool to fight colonialism (Assié-Lumumba, 2006).

During the post-independence era, higher education in Africa played a crucial role in providing human resources needed for social and economic development. Most of the universities developed in this period received funding from the former colonising powers. However in 1990s neglect was experienced by African universities because of financial and political crisis in many countries. During that period, many countries also gave a priority to basic education which was much influenced by donors focusing attention on basic and secondary education in developing countries. For example, World Bank reduced its funding for higher education from 17% to 7% between the years 1985 to 1989 (Bloom et al., 1997). Could this be a cause for the decline in quality of higher education in this period? Fortunately the negative attitude towards higher education took a turn in the 20th and 21st centuries when it was recognised that higher education was the key to national development. The World Bank (2002) upholds the importance of higher education not only in nation

building but also for social cohesion and democratic participation of citizens.

The role of the university in national development is the subject of much discussion in Africa today. History shows that most African nations established at least one national university immediately after independence. At the time of independence, there were very few trained and qualified human resources, for example in Zambia there were only 100 university graduates at the time of independence in 1964 (Mwikisa, 2002). The major purpose for establishing universities was for the institutions to play a pioneering role in addressing issues of national interest. Higher education institutions have a mandate to be proactive in addressing social issues and this not only requires commitment but also resources. Higher Education findings have often been instrumental in kick starting such efforts through higher education training.

In 2000, world leaders adopted the Millennium Development Goals (MDGs) set to be achieved by 2015. The MDGs provides a framework to ensure that human development reaches everywhere and everyone (UNDP, 2010). Higher education is central in achieving the MDGs by producing adequately trained human resources to carry out the required developmental and research activities. It is expected that higher education will play a

crucial role in the development of knowledge that can be applied for enhancement of development sectors. The place of higher education in relation to primary and basic education cannot be over emphasised. And this is the central theme for the existence of universities. Establishment of university education in Zambia was recommended by the Lockwood report as follows:

...the university must be responsive to the real needs of the country and be an institution, which on merit will win the respect and proper recognition of the university world. ...it must combine practical service to the nation with fulfilment of the historical purposes of a university as a seat of learning, a treasure house of knowledge and a creative centre of research (Lockwood, 1963).

It has been established that higher education is also a catalyst to innovations in agriculture, new materials, sources of energy, all of which play an important role in reducing poverty, achieving food security and improving health care facilities (World Bank, 2010).

METHODOLOGY

In order to analyse the higher education system in Zambia and to bring out the contribution of external funding in higher education, the following methodology were used:

- Analysis of relevant policy and strategic plan documents
- Reports from World Bank and SARUVA on higher education
- Project reports of the relevant projects presented in the report
- Analysis of written statements received on email from members of the relevant project teams on their views about the benefits and challenges of the project

Higher education in Zambia

The education system in Zambia consists of 7 years of primary schooling and 5 years of secondary schooling before students can enter university, college, or other institutions of higher learning. The first seven years of education are compulsory, from age 7 to 14 years. Transition from lower to higher educational levels is determined by the performance of the student in national examinations at the end 12 (Republic of Zambia- Ministry of Education 2010). To enter into the college or University is highly competitive due to the limited number of places available.

In Zambia, the first institution of higher education was the University of Zambia which officially opened in 1966 followed by the Copperbelt University, about 20 years later (in 1987). All education policy are formulated by the Ministry of Education and the ministry is responsible for the operation of all educational institutions including the

two universities with the exception of technical and vocational institutions, which fall under the Ministry of Science and Technology. A critical policy development in education was the publication of the national education policy entitled "Educating Our Future" in May 1996. This policy created a path for educational development that is in line with the country's political, economic, and social direction. The yardsticks of the policy were decentralization, partnership, equity, efficiency, quality, democratization and effectiveness.

During the early years of the Universities, the higher education was fully funded. Since 1970, the share of the education sector in the national budget as a percentage of the gross national product has been on the decline. The percentage of total public budget spent on education in Zambia varied between 7 to 13.4 percent, compared to 20 to 25 percent in other neighbouring countries (World Bank, 1998). Due to the decline in public finances for education, the Ministry is unable to fulfil its obligation of providing the necessary facilities to ensure universal availability of quality education. The major reasons for the decrease in availability of funds education include poor economic development, structural adjustment requirements, and increasing debt servicing requirements (Saluseki, 2000). As a result of financial problems the education sector experienced, certain economic measures were introduced in 1989, which aimed at cost recovery and sharing of costs, by the beneficiaries of university education. Despite this situation, university enrolments rose steadily

Presently, higher education in Zambia includes three public universities, i.e. University of Zambia (UNZA) in Lusaka, the Copperbelt University (CBU) in Kitwe and the Mulungushi University (MU) in Kabwe and 14 teacher training colleges under the Ministry of Education. There are approximately 150 other colleges providing post-secondary education and trainings. The Government furthermore allowed private universities to open; one example is the Zambian Open University that was established in 2004 to allow for expansion of HE enrolment in view of increased demand among high school graduates.

The higher education in Zambia is governed by legislations (Table 1) and statutory bodies (Table 2). The goals and objectives of higher education have been set through consultative processes.

Historical background of University of Zambia (an extract from www.unza.zm)

Some thought had been given in the early 1950s to the establishment of a University college in Lusaka, but such proposals as there may have been were abandoned in 1953 with the creation of the Federation of Rhodesia and Nyasaland and the related political decision to establish a University college in Salisbury (now Harare). Almost ten

Table 1. Higher education legislations in Zambia

Higher education legislation	Brief description
The Education Act of 1966, supported by the Zambia Statutory Instrument No. 43 of 1993	Provides a legal framework for the development of the education system in Zambia (basic, high school, college education, and university education) to date.
The Technical Education, Vocational and Entrepreneurship Training (Amendment) Act, 2005	Provides the necessary legal framework for the development of TEVET in general and the establishment of the TEVETA and Management Boards for training institutions in particular. It also provides for the active participation of the private sector in the provision of TEVET programmes in Zambia
The University Act No. 11 of 1999	Provides a legal framework for university education in Zambia. It stipulates the legal requirements for the establishment and governance of university education. It also defines the conditions and parameters for establishing private institutions and for maintenance of academic standards.

SOURCE SARUA (2008) – Pillay report

Table 2. Statutory bodies in the higher education sector (Zambia)

Statutory bodies	Brief description
The Technical Education and Vocation Training Authority (TEVETA)	The regulatory body for Technical and vocational training institutions.
The Examination Council of Zambia	The body responsible for regulating examinations
University Councils	The bodies responsible for overseeing university education within the institutions themselves

SOURCE SARUA (2008) – Pillay report

years were to pass before the question of a University for the then Northern Rhodesia was formally re-opened. This was done by the government which came into power in December 1962, and which for the first time consisted of a majority from the two nationalist parties, the United National Independence Party and the African National Congress. In March 1963, this Government appointed a Commission under the Chairmanship of Sir John Lockwood, a former Vice-Chancellor of the University of London, to advise on the development of a University. In its report, which was submitted in November 1963, the Lockwood Commission unanimously recommended the establishment of a University in Lusaka.

In January 1964, the Government signified that it accepted the recommendations of the Lockwood Commission and within four months there was an inaugural meeting of the Provisional Council of the University, the body charged with bringing the University into being. In July 1964, the former Rhodes-Livingstone Institute, a research institute with an international reputation for scholarly research and publications in the field of social anthropology dating back to 1938, came under the jurisdiction of the Provisional Council. In July

1965, Dr D.G. Anglin, of Carleton University in Canada, was appointed as Vice-Chancellor. A month later, the Oppenheimer College of Social Service was incorporated into the University at a time when extensive additions to its premises in John Mbita Road, in the Ridgeway area of Lusaka, were already well under way.

In October 1965, His Excellency the President of the Republic of Zambia gave his assent to Act Number 66 of 1965, and its commencement on 12 November 1965 of the same year brought the University of Zambia into legal existence.

Under a reconstituted Provisional Council, recruitment of staff had been proceeding apace against the deadline set for the first intake of students, namely 17 March 1966. On that day the first academic session commenced at the Ridgeway Campus. The President, Dr Kaunda was installed as Chancellor on 12 July 1966, in the presence of representatives of more than fifty other universities and some two thousand guests. The following day. The Chancellor laid the foundation stone for the University of Zambia on the Great East Road Campus.

University of Zambia today

Today, the University of Zambia has nine schools operating on the Lusaka and Solwezi campuses. The Directorate of Research and Graduate Studies articulates the university's ambition to become 'a centre of excellence in research and graduate studies that will contribute to the dissemination of new knowledge in Zambia'.

According to the UNZA Strategic Plan, higher education should:

'Provide learning by offering opportunities for advanced education

- to all suitably qualified persons without discrimination.
- Improve the quality of life of the people through relevant research in the identified areas of need.

- Explore a wide variety of higher education provisions for those willing and able to benefit, but unable to participate in regular full time programmes.

- Advance national development through the applications of learning and research in the professions, industry, agriculture, commerce and public life.

- Contribute to the socio-economic growth of the nation through the dissemination of relevant research findings and consultancy services.

- Foster a network of relationships with tertiary institutions in Zambia and elsewhere.

- Help promote the development of programmes of excellence in national institutions.

- Continue to press for adequate funding from government while striving to increase its income from other sources'

Based on 2007 figures, most of the students enrolled at the University of Zambia are full-time, contact students (7,983) together with some distance education students (1,785) and a small number of part-time students (354). Zambian nationals account for 10,049 of the student population, a total of 18 students come from other SADC countries and 55 from other non-SADC countries.

The enrolment of students for undergraduate programmes has increased from 7,558 in 2003 to 10,112 in the 2007 academic year (Table 3). There has also been an increase in the post graduate enrolment, in 2007 there were 312 masters students and 24 doctorate students (UNZA, 2008). With the steady increase in the number of students, UNZA needs to expand the physical infrastructure in order to offer quality education. There has also been an increase in lecturer-student ratio due to increase in enrolment (Table 4). UNZA 2008-2012 Strategic Plan aims to achieve the desired 1:10 ratio. Additionally the strategic plan recognises the need to recruit new academic staff as well as retain experienced

academic staff.

Funding for UNZA

The University of Zambia is a public university and the government is the key stakeholder both in policy direction and financing. Majority of the government funding for UNZA comes in form of tuition fee paid for sponsored students. Government funding for students (GRZ financing) is in the form of grants and bursary remittances. However there have been challenges over the disbursements of both the GRZ grants and bursary remittances, especially regarding timing. The negative budget variance, usually accompanied by delayed disbursements, have in the past negatively impacted the management of UNZA.

Therefore, UNZA has also tried to optimise existing income generating undertakings and also seek new ones to generate additional funds. There are various business ventures that UNZA has -York Farm, ZAMNET, Liempe Farm, University Horticultural Nursery, University Printer, University Health Services and Marshlands Guest House. Additionally, UNZA has also increased student enrollment for self-sponsored students, is running parallel degree programmes, short courses. Furthermore, income from funded research/projects and consultancy needs are given priority and encouraged.

In order to enhance the quality of education and sustain higher education programs, UNZA needs to invest in:

- Research
- Professional development of staff
- Institutional capacity building
- Public service

Funds received from the government, those received from business ventures and tuition fees may not be sufficient to achieve all of the above. Therefore, many of the above have been achieved through external donor funds that have been received. UNZA receives considerable donor funding; for example, Netherlands funded project 'Triple S' project, working amongst others on UNZA's ICT infrastructure and the project 'Strengthening HIV-related interventions in Zambia: co-operation in research and institution capacity building' funded by Norway. Another two such funding is presented as case studies in this paper. The funded project are presented and the outputs achieved from the project that contribute to sustainable higher education and national development are highlighted.

Research at UNZA

In the implementation years of the strategic plan (2002-2006), lack of funding for research activities slowed down research activities at UNZA and down played its role as

Table 3. University of Zambia - Summary of Enrolment Numbers (Actual data, 2007 first semester)

MAJOR FIELD OF STUDY	TOTAL NUMBER OF STUDENTS (HEADCOUNT)	NUMBER OF STUDENTS ENROLLED PER LEVEL OF STUDY			
		Under- graduate degree/ diploma	Post-graduate degree/ diploma	Masters Degree	Doctoral Degree
Science, Engineering & Technology	2,309	2,274	4	23	8
Business, Management & Law	436	396	23	13	4
Humanities and Social Sciences	6,533	6,351	9	165	8
Health Sciences	844	755	2	83	4
TOTALS	10,122	9,776	38	284	24

SOURCE: University of Zambia questionnaire response (Final Evaluation of ICU Partnership with UNZA)

Table 4. University of Zambia: Academic and Research staff (Actual data, 2007)

MAJOR FIELD OF STUDY	TOTAL NUMBER (HEADCOUNT)
Science, Engineering & Technology	158
Business, Management & Law	27
Humanities and Social Sciences	133
Health Sciences	71
TOTALS	389 (82%)

SOURCE : University of Zambia questionnaire response (Final Evaluation of ICU Partnership with UNZA)

frontier of knowledge. This was later rectified to some extent by limited research grants being made available to the staff by the Directorate of Research and Graduate Studies as well as by donor funding. UNZA also took the initiative to develop coordination of research to put in place institutional mechanisms for storage, retrieval and dissemination of research work. UNZA also encouraged under taking of national priority-oriented research for postgraduate programme and publishing of research work by postgraduate students (UNZA, 2010).

Case study of a Development Partnership for Higher Education (DeIPHE) project between Department of Psychology, School of Humanities and Social Sciences, University of Zambia and Division of Psychiatry, School of Community Health Sciences, University of Nottingham (2007-2010) 'Project Coordinator in UK- Prof Cris Glazebrook'

DELPHE, was launched in 2006, it was funded by DfID with additional support from the British Council and higher education institutions in the UK and overseas. DELPHE supports a variety of partnerships between higher education institutions, enabling them to collaborate in activities linked to sustainable development and poverty reduction in DfIDs 25 priority focus countries across Africa and Asia, including Zambia.

Partner institutions work on initiatives for skills development, knowledge sharing, problem solving research and other activities that will help towards achieving the Millenium Development Goals.

This project sought to scale up activities to meet the demand for youth empowerment and support. Zambia is one country that bears the greatest burden of HIV and AIDS, it is estimated that 95,000 children aged 0 to 14 years are and 14.6% of young adults in the economically active age range of 15 to 49 are HIV positive. The prevalence amongst young people aged 15 to 19 was 9% in 2008, stable since 2006 (Zambia Demographic and Health Survey, 2007). Adolescents living with HIV and AIDS in developing countries are a particularly vulnerable group. Research consistently reveals that psychological distress occurs more frequently in HIV-positive than HIV-negative individuals, a recent survey conducted in Zambia by Chirico and Fylkesnes (2011) involving 4466, 15-49 year old participants, found the prevalence of mental distress to be 20.8% in the HIV-positive participant group compared with only 13.7% in the HIV-negative group. Although commendable efforts have been made to improve HIV and AIDS related treatment, palliative care, home based care and psychosocial support, but interventions to improve quality of life in the vulnerable group have lagged behind. In particular the psychological health of young people with chronic

conditions has been neglected and we found high rates of emotional difficulties in a sample of young people with HIV (Menon et al., 2007).

Particular focus of the project were the psychological consequences of ill health and the impact adolescents' health-related beliefs and behaviours can have on the outcomes of health care. The provision of informational and emotional help through peer group support has shown promising results in the field of health behaviour in developed countries, but has not been evaluated in a Zambian setting. The aim of the project was to empower young people to protect and improve their mental, physical and sexual health through peer-led health education programmes, and to encourage them to participate more actively in their own health care. Such empowerment was seen to be dependent on appropriate health education materials and sensitive health care that recognizes the importance of involving young people in decisions about their health and treatment. A complementary aim of the partnership was, therefore, to promote effective communication between health professionals and young people through the training of health professionals and the introduction of health education as an academic area of study. To achieve these aims, the project had the following specific objectives:

1. To research the health beliefs and health information needs of young people with chronic health conditions and to identify factors influencing adherence to treatment and use of health protective behaviours.
2. To explore the effectiveness and acceptability of existing services for young people with chronic health conditions and to identify barriers to shared decision making.
3. To develop engaging, culturally appropriate health education material for young people to be used in health care settings and within peer support programmes.
4. To implement communication skills training to enhance health professionals' confidence and effectiveness in supporting shared decision making during their consultations with young people.
5. To develop an evidence-based health education module for undergraduate students
6. To implement peer-support programmes for young people with chronic health conditions aimed at improving adherence to treatment, protecting mental health and promoting health protective behaviours.

Impacts of the project

The education material includes information leaflets on HIV and AIDS and Epilepsy, as well as a Training DVD package on Communicating with Adolescents. The research studies carried out have been presented at international conferences. The feedback received from the health practitioners who underwent training was positive and encouraging. Some of the feedback

received:

- “ ... I think we need more training of this nature”
- “I would like to thank British Council for funding this excellent workshop, I hope it would continue”.
- “... it was a real eye opener to realize that adolescents are indeed a special group. Training in this area would be useful to Zambian health practitioners”.

Research and professional development for staff

It was possible to carry out various research studies that were fed into training health practitioners as well as improving health services for young people. The research carried out included and presentations made at conference include:

- A mixed methods study evaluating attitudes of Zambian health professionals to involving adolescents in health care and the impact of an educational workshop on those attitudes. The results were presented at the Society for Adolescent Medicine conference in Toronto (2010)
- Development of health education leaflets based on qualitative research and a review of the literature. These leaflets were successfully evaluated in a cluster randomised controlled trial in 8 schools (678 participants). The results of the study have been accepted for oral presentation at the European Association of Paediatric Societies conference in Copenhagen (October 2010)
- The impact of the HIV health education leaflets on knowledge, stigma, control and mental health at 5 weeks follow-up were evaluated in a randomised controlled trial in a clinic sample (80 participants).
- Presentation at Association of Common Wealth conference for Heads of Institution. The presentation was on 'Barriers to involving adolescents in health care and decisions about treatment'
- Invited Symposium at the 21st biennial congress of the International Society for the Study of Behaviour Development (ISSBD) in July 2010. The symposium was titled Mental Health in young people with chronic conditions: Promoting self management in Zambian adolescents.
- A workshop on skills needed by Junior Medical Doctors was conducted at the request by the UNZA Medical Student's Association.

Social service

This project that made possible research and training programmes made it possible to contribute to social service through improved health service for young people. While youth friendly corners in the health centres have been created to act as entry points for young people, they are not yet fully functional due to lack of

training for health professionals to provide services to young people. There is also an apparent reluctance among young people to access these centres and this needs exploring. Also, most youth friendly corners are situated in Maternal Child Health wings and some young men have been finding it uncomfortable to go to these corners because they are located in exclusively female service areas. Since they come from the same communities, some women could be friends to the young people's parents and are likely to tell their parents about their presence at the health centres for medical attention. In turn parents are likely to suspect and ask them about their medical status. Beliefs of young people regarding their involvement in treatment was explored by the project and this was in turn used to produce a training DVD for health practitioners.

Awareness levels concerning HIV and AIDS including STI's and early pregnancy complications have been raised but adolescents require further training and skills to adequately bridge the gap between awareness and the adoption of positive health behaviours. Bridging this gap through effective communication, information and support will reduce the risks they face as a result of STIs, HIV and other chronic illnesses. Our recent research found low rates of disclosure of HIV status to young people even among those receiving anti retroviral treatment (Menon et al., 2006).

We found that young people have been mobilized and trained as peer educators; however most of them have dropped out because the groups were not adequately strengthened and supported while some were lost because they worked as individuals. Local schools have been mobilized to form anti AIDS clubs; however despite this achievement the capacity of the clubs hasn't been fully built to help young people in school to access reproductive health education materials, HIV and AIDS information including life skills education. The health information leaflets that were produced have been widely distributed in all parts of the country. From research results there was evidence to suggest that the HIV leaflets were able to improve knowledge about HIV and AIDS and to reduce stigma associated with HIV and AIDS.

Case study of Norad Programme for Master Studies (NOMA) in Clinical Neuropsychology. A project between Department of Psychology, School of Humanities and Social Sciences, University of Zambia and Department of Psychology, Norwegian University of Science and Technology, Norway (2008-2012) 'Project Coordinator in Norway - Prof Knut Hestad'

Norad's Programme for Master Studies (NOMA) is a programme for educational cooperation based on equal partnerships between higher education institutions in Norway and in eligible countries in the South. NOMA is

funded by the Norwegian Agency for Development Cooperation (Norad) and the overall administration of the programme is the responsibility of the Norwegian Centre for International Cooperation in Higher Education (SIU). The programme is based on the interest and expertise that Norwegian academics and institutions have in collaborating with partners in the South and aims to contribute to capacity and competence building in eligible countries in the South. The overall goal of NOMA is to contribute to the education of staff in public and private sectors as well as civil society in selected developing countries through building capacity at the Master's level in higher education institutions in the south.

The project was formulated to build an interdisciplinary Masters program in Neuropsychology related to HIV and AIDS at the University of Zambia. The program is based on experience from section of Clinical neuropsychology, Norwegian University of Science and Technology (NTNU), Trondheim and University of California, San Diego, HIV Neurobehavioral research Center. The Zambian expertise came from School of Education, School of Medicine and the Department of Psychology. It was for the first time at the University of Zambia that an interdisciplinary Post Graduate degree program will be offered.

To start it was to build competence and capacity among the academic staff at the University of Zambia who are involved in the development and implementation of the program. It was also necessary to collaborate with medical and research faculty in Zambia who were involved in HIV and AIDS-related work. The capacity building was began in 2007-2008, and the first cohort of masters student in the program were registered in 2008. The curriculum was based on the findings of a pilot research done as a part of the NOMA start-up funds received, as well as on the needs of the Zambian society and health sector.

The collaboration between experts in Neuropsychology in Norway and the relevant academicians at the University of Zambia gave rise to a program of high quality tailoring to the needs of the Zambian society as well as contributing to the University of Zambia's moto of 'Service and Excellence'. The University of Zambia HIV and AIDS office is largely supported by a Norwegian funding agency, SAIH; this program will add on and complement the already existing activities of the office. The program also addresses Zambia's Education and Health Strategic plans which place a heavy emphasis on combating the effects of HIV and AIDS. The shortage of health practitioners and the non-availability of local relevant higher education programs will also be reversed through this program. Tapping from the expertise of Psychologists as well as Medical practitioners in Zambia, we were able to offer a program with a holistic and multidisciplinary perspective.

Outcomes of the project

There have been several positive outcomes of the project. The outcomes presented here are substantiated with quotations obtained from students and NOMA team members. As this was a multidisciplinary project involving three schools at UNZA, at the beginning there were reservations by some NOMA team members. The following is a quotation from Prof Robert Serpell, a senior member of the NOMA team:

'Thank you for persuading me to join the NOMA project. Participating in the NOMA-sponsored UNZA MSc program in Clinical Neuropsychology as an instructor, research supervisor and member of the programme management team has afforded me several valuable opportunities for intellectual and professional development and public service'.

Training of students

Training students at a post graduate level in a clinically and research oriented course is a major challenge due to the resources involved to offer good quality training. For example, post graduate level training in clinical neuropsychology required establishment of a laboratory, purchase of cognitive testing material, computers, establishment of library. Higher education funding serve as catalyst to establishing such facilities. According to one of the students who graduated from the first cohort (Mr. Gabriel Walubita) of the program, his training would not have been possible without the funding received:

'I consider it a great privilege to have been given a grant by the NOMA project to help me study for an MSc in Clinical Neuropsychology at the University of Zambia, Medical School. For this, I want to express my heartfelt gratitude to the NOMA project for contributing to not only my life but also to my country's higher education sector. What I have acquired is more than an MSc degree. I now know how to assess neurocognitive disorders and rehabilitate the patients in these conditions. Through this training, I have been given the capacity to contribute meaningfully through teaching, assessment and research to the development of quality teachers of special education at our institution. I will be able to tackle world problems like HIV/AIDS, specifically effectively assessing the neurocognitive manifestations of HIV. I will be able to learn and understand more about neuropsychology since my mind has now been opened. When I look beyond the University of Zambia, I see myself using the professional, teamwork and leadership skills that I have learnt from my studies in the development of our country. This grant is a stepping stone to more opportunities for me in the world of neuropsychology. I appreciate all the support I received!'

Professional development

Interdisciplinary nature of the projects seems to have contributed to the professional development of staff by exposing them to varied knowledge in related fields. Bridging of gap between psychology and medicine was emphasised by Mr Sichimba, a member of the NOMA team:

The Noma project has been a huge learning experience for me. During this project I have come to appreciate the fact that boundaries in discipline are indeed fluid and that we can draw the richness within each field to bring about multidisciplinary learning and give birth to a graduate who does not only understand the psychology of being, also understands the physiology, pharmacology and neuroscience and how this affects a patient. Further, for a long time now, there has been a big divide between medicine and psychology and the NOMA project provided an avenue to unlock these barriers and focus on the possibility of shared learning from each other. For example, as you all might recall, in the initial phase of the project a team was constituted to look into the possibility of how the Ministry of Health could get involved by creating a vacancy for our Neurological clinical graduates in the ministry. This endeavour resulted in sharing of information with our friends in medical profession on Neurological clinical psychology and the window of possibilities that the field unlocks and how our graduates could be of use in the delivery of health to Zambians.

Prof Ngoma, a medical practitioner on the team, also appreciated the multidisciplinary approach and the opportunity to interact with other professionals:

The NOMA project reminds me regularly of the added value of multidisciplinary inputs into research, teaching and publication. During this collaborative work I have enjoyed the wisdom of psychologists whose research skills and understanding of collaborative work enriches my own academic approach (Ngoma, 2011)

The need to adopt a holistic approach to maximise benefits to patients was also emphasised. This was again the part and parcel of a multi disciplinary program:

....In addition to that, we had instances where lecturers in mainstream medicine would get surprised upon seeing students from a none science background like psychology attending classes in the school of medicine. Still many asked our students "what do you become at the end of the course?" This example illustrates how collaboration that NOMA project fostered helped to remind each one of us psychologist, educationist, biologist, psychologist, pharmacist and psychiatrist of our ethics especially the tenet that "the patient comes first and hence we should act in the best interest of the patient/client". Thus, acting in the best interest requires insights in other fields and the strength that can be drawn from each field to bring about healing. To me that has been a great learning from NOMA. Having said that, however, the NOMA project has also

provided learning's that we should always plan for sustainability beyond the project phase. It would have been my wish to see others graduating with Phd in Neurological clinical psychology at the end or within of the NOMA PROJECT phase so that we can have local human resources to assist in the teaching of program beyond the project. There is no doubt that our International collaborators, who themselves are experts neurosciences have helped us run the program but my fear is aside of the local staff that have made invaluable contributions, we should have had two specialist in Neurological clinical psychology by the end of 2012.

Research

Republic of Zambia-Ministry of Education policy on education has a chapter that is dedicated to research and development as a priority area. The policy in part states that:

Research is important in the operation and development of the educational system. The isolation of successful strategies and interventions, the identification of problems affecting the system or any of its parts, the analysis of policy options that could make the delivery of education more effective and efficient, and the evaluation of policy effectiveness, all require the information and insights that come from well-designed research. (Republic of Zambia, 1996a:148)

The national policy on education also directs the research units existing in the ministry of education 'to establish close linkages with the universities and other research agencies in order to ensure that research is undertaken in priority areas and that the data base on the education system and research findings are disseminated to interested parties'. (Republic of Zambia 1996a:149).

In order for the progression of higher education and in order to offer good quality higher education, research is a key. Research grants are difficult to come by at UNZA, but the professional development of staff is also very much dependent on research. This is where projects such as NOMA become essential. According to the secretary of the steering committee, the project has been especially useful in contribution to professional development through research. Mr. Kalima, a member of the NOMA team, also persuading a PhD study during the project period commented as follows:

'The collaboration has given me opportunity to learn a lot more research through the many collaborative work that came through institutional collaboration. There has been opportunity through the funding of the project to learn some skills in research for special population and specifically in research limited settings. It has been interesting to learn that there are many options available for research that could help meet the needs of societies regardless of what their SES may be. One specific benefit I got from this collaboration was some support to undertake further investigations for my Doctoral studies. I

was helped to identify a specific topic for my PhD studies through one research that was undertaken through the collaborative research. As a beneficiary of the data collected from the institutional collaboration, I can only wish that such methods of funding and contribution to research be encouraged as they help bring together many skills to one place in order to make a difference to the world. There is so much that can be achieved in such collaboration including skills for research, publication and knowledge exchange. This has been a wonderful experience and I look forward to similar interactions.'

Impact of external funding for higher education

Universities are considered to be knowledge developing centres and therefore need to be in the forefront of research. According to Edigheji (2009), for research and training to contribute to socio-economic development of the nation, 'universities need to:

- to train and empower students to become critical thinkers;
- to equip students with competency, skills and confidence required for socio-economic development;
- to promote political freedom, democracy, human rights, equity, justice and good governance;
- to produce technocrats, political and administrative leaders able to address developmental issues and challenges facing the society;
- to produce professionals capable of planning, developing policies, managing, designing and inventing new products and solutions;
- to serve the needs of the market, the public and the surrounding communities;
- to produce graduate entrepreneurs who will promote social-economic enterprises at community level;
- to work with the industry to turn innovations and research outputs into commercial products; and
- to forge strong relationships with the business community in order to secure research and investment funds'.

The above to be achieved, universities must function at their optimal level which would only be possible with adequate research, trained staff, institutional resources (laboratory, IT facilities, library). From the above case studies and discussion we see that all these were made possible with funding that was made available from external funding sources.

The major objective of the University of Zambia is to provide for the nations need of trained manpower. The University Act No. 11 (1999) provides a legal framework for university education in Zambia, according to the act; the purposes of public university are to:

- provide university education, promote research and advancement of learning;
- disseminate knowledge and, without discrimination, to hold out to all persons, who meet all the stipulated

academic or professional qualifications, the opportunity of acquiring university education;

- to provide facilities, appropriate to a University of the highest standing, for the pursuit of learning and research and for the acquisition of both liberal and professional education, which is responsive to the needs of Zambia;
- to make those facilities available to persons equipped to benefit from the use of the facilities on such terms and conditions as Council may determine.

Accordingly, major functions of the University of Zambia are teaching, learning, research and public service:

Teaching-Learning

Teaching and learning are central to the University of Zambia functions. This is important to train appropriately qualified human resources to meet the nations need. To meet the ever changing needs of the dynamic nature of the social and economic environment, the university must also make changes in its curriculum design new courses as and when necessary.

MSc Clinical Neuropsychology program was out together to meet the needs of the nation. Health problems such as HIV and AIDS have resulted in compromised quality of life and increased mortality rate in all parts of Zambia. HIV and AIDS is now the leading killer in Zambia and have reached a point of national emergency. Health problems such as HIV and AIDS have resulted in increased mortality rate in all parts of Zambia. The 2001-2002 Zambia Demographic and Health Survey (ZDHS) showed that 16 percent of the population aged 15-49, around one in every six individuals in this age group in Zambia, is HIV positive. However, the numbers may be even higher than, as high as 30-35% of the population at least in some areas. Relatively little is done in Africa regarding neuropsychological effects related to HIV-infection. Research studies done in other countries indicate that HIV may cross the blood brain barrier early in the course of infection and create mild cognitive deficits in quite many infected individuals. Even though, HIV dementia is quite rare unless there are other symptoms of sickness in the HIV-infected individuals, it may in some cases be the AIDS defining illness. Also, individuals with none or few other symptoms of the HIV-infection may have milder cognitive deficits. These minor deficits might influence academic performance at school and work to a substantial degree. It is therefore necessary to keep track of the development of cognitive performance in infected individual despite that they don't have any other symptoms related to AIDS. In knowing the individuals performance, it will be much easier to give them the necessary treatment and support. Zambian society, like the rest of the African region, is faced with a serious shortage of professionals with

relevant knowledge and expertise to provide such technical advice and guidance in the area of neuropsychology. There is also a substantial demand by the University of Zambia graduates for such a programme. MSc in Clinical Neuropsychology is clinical and research oriented. The knowledge the students gain will be needed in patient treatment and care. This masters program will also prepare the students to continue with a Ph.D.

It is for the first time that a multi-disciplinary Masters program is being offered at UNZA. This had led to the development of a network across the different schools involved in teaching the program. The program also has students from various academic background, but at the end of the first semester it was interesting to note a streamline of knowledge related to neuropsychology.

Research

In addition to teaching and learning, the University of Zambia is expected be in the forefront in research that provide solutions problems to societal problems, create and innovate new technology, improve care and support services, as well as to inform policy decisions. Research is also expected to generate knowledge, which should inform teaching and learning.

Both the case study projects presented in this paper have contributed a great deal to research that has an impact on the society. Research done on DelPHE projects have led to production of information leaflets and training DVD that can in turn be used in teaching and training. The research studies done on DelPHE and NOMA projects have also been disseminated at workshops and conferences and therefore contribute to the wider pool of knowledge. Being involved in research studies also contributed to the personal and professional development of staff members by enhancing their skills, knowledge and publication.

Prof Ngoma commented on the added advantage of the opportunity to publish:

...Teaching, mentoring students, participating in collaborative research planning, supervision and internal examination is an enriching and fulfilling journey for any academician, but also participating in a publication, is icing on the cake...(Ngoma, 2011)

Public service

UNZA provides various services to its various stakeholders through its consultancy, outreach and extension activities. These services are usually based on partnership basis with communities and responding to a particular identified need. The outputs from both the projects presented here have made a contribution in this regard. The outputs from the DelPHE project would

contribute to improved health care and support service for young people as well as towards training of health practitioners. The research studies carried out by the NOMA team as well as the Masters students have been ground breaking in the area of understanding the neurocognitive effects of HIV and AIDS. We have been able to explore the usefulness of the International Neurobehavioural test battery in Zambia and to establish Zambian norms to interpret the results and better understand the performance on this battery by Zambian adults. This in turn is expected to improve the health services provided to HIV positive individuals. This program has also been able to train a new cadre of health professionals who will be able to contribute to their nation effectively in the field of clinical neuropsychology. According to Dr Paul, a psychiatrist on the NOMA team: *'The Masters Programme in Clinical Neuropsychology is the first step taken to bridge the gap between Neurology and Psychology. So far no one in this country was trained in this field and considering the fact that the need base in this country for such professionals is immense. The professionals trained in Clinical Neuropsychology can therefore make an objective assessment of the nature and extent of the level of social, occupational and intellectual impairment of patients with brain disease and how this will affect their day to day activities, such as education, work, social interaction and occupation'*.

Challenges of donor funds

While external funds from donors remains an important aspect of financing higher education it has limitations and challenges. In many instances donor funded education projects are fragmented so as to have a holistic impact on the whole higher education institution (Ishengoma, 2009; World Bank, 2010). In this case, it would lead to uneven distribution of funds within the university making one department or unit 'rich'. But this aspect can be minimised as was done in the case of the NOMA project presented in this paper where the project was a multidisciplinary one that involved 3 schools and various departments, thus ensuring that a larger part of the university benefits from the funding.

At many instances, allocation of external funds is often focused on areas that are too narrow in scope. Moreover, it is claimed that such grants - in many cases - do not promote originality, creativity and novelty. A possible outcome could also be that the strategic management of the universities will be moved from the institutions to the funding agencies and organisations.

A challenge of research funding is that many times it becomes too complicated to handle by an academician who may not necessarily have administrative skills. Other unintended effects are that strategic research may harm basic research and that an unintended effect could be that the quality of research may be weakened, when funding systems prioritise politically defined areas. The

increased time and resources spent on applications and reporting are also tedious.

Finally, an unintended effect is that external grants, due to low overheads and demands of co-financing, tend to down play the basic grants and thereby limit the decision making of the higher education institution.

CONCLUSION

The challenges which most universities face in contributing effectively to national development include the following (Muchie, 2009; SARUA, 2008):

- 'Little investment and inadequate budgets set aside by governments to run universities;
- Competition for resources with other more popular sectors like the primary and vocational trainingsub-sectors, health, agriculture, water and infrastructure;
- Competition with other institutions for good students and academic staff;
- Increasing student fees due to high running costs of universities;
- Dilapidated infrastructure and aging teaching facilities;
- Brain drain to greener pastures, politics and other better paid jobs;
- Poor staff incentive packages and retention schemes;
- Ageing and high retirement rate of senior and experienced staff, with no succession plans;
- Few students with an interest in science and technology programmes, i.e. less than 22%;
- More students enrolled in social sciences, management and business programmes (70%);
- Lack of qualified teaching and technical staff in the market;
- Pressure to produce more graduates especially in the fields of education, agriculture and health;
- General feeling from the public that universities are producing job seekers rather than job creators, due to lack of practical and entrepreneurship skills;
- High dependence on external donors especially for research and innovation funds;
- Gender imbalance especially in science and technology programmes'.

University of Zambia, like many other universities in the region, also face many challenges. One of the biggest challenges perhaps is the increased student enrolments. Enabling larger numbers of students from socially or economically marginalised groups access to the higher education and the opportunities it brings, while maintaining or improving the standards of quality of education. In order to do this at its best would require substantial investment in institutional infrastructure and professional development of academic staff. But many of these have been made possible by external funding received by UNZA.

Disclaimer

The views presented in this paper are that of the author and do not represent that of the University of Zambia or the Government of the Republic of Zambia.

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