Third Open and Distance Learning Conference in Namibia

PROCEEDINGS

“Promoting Lifelong Learning in Open, Distance and eLearning through inclusive and equitable quality education”

19 -20 October 2016
Swakopmund, Namibia
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34. Open and Distance Learning Enablement through Resource Mobilisation
The third Open and Distance Learning (ODL) Conference was held in Swakopmund from 19 to 20 October 2016 under the theme “Promoting Lifelong Learning in Open, Distance and eLearning through Inclusive and Equitable Quality Education”. The Conference was preceded by a pre-conference aimed at building a culture of sharing so as to improve access to education and affordable learning resources through Open Educational Resources (OERs).

The Conference brought together more than one hundred ODL practitioners and experts from different countries including Germany, the United Kingdom and SADC countries. Expertise was drawn from ODL Practitioners from the University of South Africa and the Open University of Tanzania who also served as keynote speakers. Renowned experts in the discipline of ODL delivered keynote addresses under the themes: Integration of ICTs in Teaching Learning and Assessment; Increase access to education and affordable learning resources through OER; Lifelong Learning through ODL; Quality Management in ODL; and Resource Mobilization in ODL and Lifelong Learning. Over the two days of the Conference, twenty-four academic papers were presented and delegates could learn from the latest innovations in the field.

The success of this Conference came as a result of sponsorships from participating NOLNet partners (NAMCOL, NUST and UNAM), external stakeholders and both Ministries of Education. NOLNet greatly values the unwavering support from the Ministries. On behalf of NOLNet, we would also like to thank all our sponsors for having gone the extra mile to make this historic event a success.

Finally, we would like to thank the Conference presenters for sharing their time, research and intellectual property with all the delegates. The success of the conference demonstrated the desire and need of all parties involved. The onus is on all of us to implement and apply the knowledge gained to effect an improvement in education in our country. Let us continue to make a difference in the lives of our people.

Long live ODL, long live.

The 2016 conference was organised in cooperation with the NOLNet partner institutions. We are grateful to the generous support provided by our partner institutions and the Commonwealth of Learning.
We are grateful to the Conference Organising Committee and congratulate them on a job well done. The members of the 2016 NOLNet Conference Organising committee were:

**ACKNOWLEDGEMENT**

2016 NOLNET CONFERENCE ORGANISING COMMITTEE

Ms Rholene Bok, Chairperson (NAMCOL)
Ms Edwig Karipi, Vice-Chairperson (NAMCOL)
Mr Wynand Diergaardt (NUST)
Ms Estelle Cloete (NUST)
Ms Josephina Skrywer (NUST)
Ms Victoria Amakali (NOLNet)
Ms Stellamaris Patoko (NOLNet)
Mr Gotlieb Kaperu (MHETI)
Mr Steve Lilungwe (NIED)
Ms Martha Niitembu (UNAM)
Ms Ilena Peter (UNAM)
WELCOMING REMARKS

AT THE NOLNET 3rd OPEN AND DISTANCE LEARNING CONFERENCE

On the theme:
“PROMOTING LIFE LONG LEARNING IN OPEN, DISTANCE AND E-LEARNING THROUGH INCLUSIVE AND EQUITABLE QUALITY EDUCATION”

19 OCTOBER 2016
STRAND HOTEL, SWAKOPMUND
REPUBLIC OF NAMIBIA

• Honourable Itah Kandjii- Murangi- Minister of Higher Education, Innovation and Training,
• Dr Hertha Pomuti, Chairperson of the NOLNet Board of Trustees, in her absence,
• (Her worship, the deputy Mayor of Swakopmund, Honourable Elago Maria
• Other Board Members Present,
• NOLNet Management Committee,
• Heads and representatives from NOLNet Partner Institutions and other ODL Providers in the region and beyond - from as far as Germany,
• Professor Bisanda from the Open University of Tanzania,
• Professor Makoe from Unisa,
• Ms Victoria Amakali – NOLNet Executive Secretary,
• Ministry of Education Officials,
• Distinguished invited guests,
• Ladies and Gentlemen,
• Members of the Media,

I have been asked to sound the welcoming remarks at the 3rd Open and Distance Conference to be hosted by NOLNet. Thank you for taking time off your busy schedules to be here this morning. We appreciate your presence greatly.

Let me pause a while to share a quote with you by Vivienne Forrester, a renowned international writer: “Life is a learning process; learning is a lifelong process, you can’t separate them.

Having in mind lifelong learning, allow me to share some information with you about NOLNet, our umbrella body that advocates lifelong learning. The Namibian Open Learning Network Trust aims to bring together all the Open and Distance Education providers within Namibia to share resources, expertise and best practice in pursuit of development and capacity building. NOLNet was called to life in 2001, to further serve and pursue the goal of the Government’s EFA (Education for All) target and has the following member Institutions:

• The Namibian College of Open Learning (NAMCOL)
• The University of Namibia – Centre for Open and Distance and eLearning (UNAM-CODEL)
• Namibia University of Science and Technology – Centre for Open and Lifelong Learning (NUST-COLL), and
• The Ministry of Education, Arts and Culture (NIED and DAE)

Master of Ceremonies,
NOLNet is strategically placed to facilitate communication amongst all its members on their activities and plans in relation to ODL. It aims to coordinate the development of new courses and facilities to avoid duplication. There is a saying that “you do not have to invent the wheel”.

Another aim is to collaborate in the provision of services for Namibian students such as the Resource Centres, of which there are 54 in major towns spread across Namibia. In the same vein, NOLNet can proudly boast about the eLearning training rendered to SADC countries. The most significant contribution is the Education Radio Project which includes a variety of inter-ministerial education programmes on NBC and community radio stations.
According to the 3rd UNESCO Global Report on Adult learning done in 2015, Levels of literacy among adults remain very low. Around 757 million adults, 115 million of whom are aged between 15 and 24, still cannot read or write a simple sentence. Most countries have missed the Education for All target of achieving a 50% improvement in levels of adult literacy by 2015; only 39 countries met the target. The majority (63%) of adults with low literacy skills are women. The Sustainable Development Goals that were adopted by education Ministers worldwide, set targets for improving the lives of these people- our national Harambee plan sets the same targets - so that no one is left behind.

The question in everybody’s mind is: HOW? In order to end poverty, education levels should first be improved with increased access - worldwide, in Africa and on local soil in Namibia. This is where Open and Distance Learning bridges the gap to include all those who either fell out of the system, or those who want to pursue their education without the confinement of four walls. The value of education in the attainment of our national plans can never be underestimated, nor can it be overemphasised. It remains at the core of our progress.

This conference comes at a time when crucial decisions need to pave the road for the birth of our very first Open University. This dream of establishing Namibia’s Open University was conceptualised in 2006, during the 1st Open and Distance Learning Conference held in Windhoek. That was 10 years ago, and much has happened since to prepare the open and distance learning landscape in Namibia. I believe that the timing is perfect to send this goal through the prepared goal posts so that we can turn statistics around with regard to illiteracy and unemployment in our communities.

Allow me at this point, to briefly make reference to the theme: “Promoting Lifelong Learning in Open, Distance and eLearning through Inclusive and equitable quality education”. A number of sub-themes on ICT’s, learning resources, quality and resource mobilisation will set the scene for the presentations and discussions that will take place over the next two days.

Our participants are drawn from all the member Institutions, as well as from international states such as Germany. Locally, we have drawn on expertise in the region from Tanzania, Botswana, South Africa and Zambia.

Over a two-day period, local scholars from member institutions will participate actively by sharing their experiences, research findings, best practice and methods in ODL.

Our line Ministerial leaders, Hon. Itah Kandjii- Murangi and Deputy Minister of Education, Arts and Culture, Hon. Anna Nghipondoka are part of the conference to rubberstamp our sentiments and dedicated efforts on cabinet level. Honourable Minister, we are indebted to you and your counterpart for ensuring that our national policy on ODL is approved by our Cabinet.

It is our task as education providers to keep the ball rolling for the progressive growth of the country’s welfare, and to this end, ascertain the achievement of our National Development Goals. Education can no longer be reviewed simply as a means of raising political and social consciousness. It is an integral component of an overall development effort. On the basis of the recognition that the development of a country’s human resources is essential to its prosperity and growth, many successes have been recorded, but there is still room for more to be done.

It is on this note that I would like you recognise the effort to improve our lives, homes, communities and a country at large, by tackling the bull by its horns. Let us deliver on the promise of Ubuntu in safeguarding our nation; in laying the foundations for improved education delivery in open and distance education, and in making sure that no one is left behind. Be assured that the table has been laid with an enticing menu of topics covering a wide variety of issues in education, but ODL in specific.

I thank you

BY MR. HEROLDT MURANGI
DIRECTOR : NAMIBIAN COLLEGE OF OPEN LEARNING
MINISTERIAL ADDRESS

AT THE 3RD NATIONAL OPEN AND DISTANCE LEARNING CONFERENCE
On the theme:
“PROMOTING LIFELONG LEARNING IN OPEN, DISTANCE AND eLEARNING THROUGH INCLUSIVE AND EQUITABLE QUALITY EDUCATION”

19 OCTOBER 2016
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• Professor Bisanda from the Open University of Tanzania;
• Professor Makoe from Unisa;
• Ms Victoria Amakali – NOLNet Executive Secretary,
• Ministry of Education Officials,
• Distinguished invited guests,
• Ladies and Gentlemen,
• Members of the Media

I feel honoured and delighted to join you this morning at this conference, convened by the Namibian Open Learning Network Trust (NOLNet) to bring together experts in Open and Distance Learning (ODL) on the theme: “PROMOTING LIFELONG LEARNING IN OPEN, DISTANCE AND eLEARNING THROUGH INCLUSIVE AND EQUITABLE QUALITY EDUCATION”.

Your participation is a testimony that ODL is no longer a step child of any education system, but a preferred mode of study because of its flexibility and evidence of quality output to those who do not prefer the traditional formal system due to work and family commitments. I believe as we are gathered here this morning, many of us have attained our educational qualifications through this mode of study, however, we are not convincing enough when we are confronted by those who believe in the traditional face-to-face mode of study.

I have the understanding that open learning is a philosophy founded on the principle of flexibility concerning when, where and how the learner studies. This approach is especially relevant for learners who are physically and/or geographically challenged.

According to the UNESCO definition, distance education is the use of specific instructional techniques, resources and media to facilitate learning and teaching between learners and teachers who are separated by time or place. Techniques, resources, and media are dependent on factors such as: subject matter; student needs and context; teacher skills and experience; instructional goals; available technologies; and institutional capacity. Despite the proliferation of technologies in education, distance education in developing economies is still heavily reliant on printed materials. Of late, the term eLearning is making headlines and I am reliably informed that many of you attending this conference, now boast with pioneering this field. I’m really excited and say that capacity building starts with equipping yourself and others and there is no better place to share what you know than this conference. Your sense for innovation and pioneering new fields of delivery modes is a step in the right direction to take our education delivery to higher levels. I can only salute you for that.
MINISTERIAL ADDRESS

In 2010, the UNESCO Institute of Statistics revealed that there were 71 million out-of-school youth excluded from any form of education. Of this figure, 30% are in sub-Saharan Africa. Statistics six years later reveal that about 75 million adults around the world cannot read or write a simple sentence and women are the first to be denied these basic skills. The UNESCO data confirm the need for renewed and more targeted initiatives to increase adult and youth literacy rates, and to achieve the goals that were missed by 2015. For this reason, the Sustainable Development Goals that were adopted by the United Nations General Assembly in September 2015 contain a new literacy target: “By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.”

Looking at these frightening statistics, and the new goal set by the universal SDG’s, it is important that we act and react sooner rather than later. However, it appears that various governments’ laws, especially in developing countries do not have enabling policies and systems to cater for the educational needs of its citizens outside the conventional system. The onus is on us to collaborate in order to address the gaps within our own education systems. That is why an intervention such as this is so significant, as it holds the potential to change the education landscape.

The provision of education through open and distance learning (ODL), therefore, provides access to quality education where it might not have been possible to study through the traditional school system. ODL has the potential to open up opportunities to a wide range of learners by increasing access to education and by removing unnecessary barriers. ODL, if taken seriously, could also serve as vehicle to reduce poverty, improve livelihoods and contribute to the economic development of our country.

In this 21st century, with the advent of ICTs, the Internet and proven systems in place for quality ODL delivery, education at any level cannot be confined to the four walls of a classroom. Therefore, we should create study opportunities to enable our people to study anywhere and anytime.

After the previous two national conferences held on ODL, Cabinet directed NOLNet to develop a National Policy for Open and Distance Learning in Namibia. With support from the Commonwealth of Learning, the National Policy on Open and Distance Learning was developed (in 2007) to guide the development and delivery of ODL in the country. The policy was submitted earlier this year for tabling and discussion in Cabinet. The onus is now on us as education Ministers, to do justice to this task. I can assure you of our commitment to this task, and support from the government as a whole. We as Ministers will dedicate our time and efforts to make sure the ODL policy is adopted for implementation in Namibia by end of 2017 if not sooner.

As we plan and work toward the realisation of a knowledge-based society by vision 2030, we need to ensure that all various forms of education in the country are well regulated, guided and directed towards the national developmental goals as stipulated in various documents, inter alia, the Fourth National Development Plan (NDP4) and the National Human Resources Plan. In October 2015, one year ago, the Sustainable Development Goals were adopted for implementation by various countries, replacing the Millennium Development Goals which came to an end in 2015. Under a broader agenda, Vision 2030 - poverty, inequality and injustice remain at the core of the business. Achieving inclusive and quality education for all reaffirms the belief that education is one of the most powerful and proven vehicles for sustainable development.

This goal aspires to ensure that all girls and boys will complete free primary and secondary schooling by 2030. It also aims to provide equal access to affordable vocational training, and to eliminate gender and wealth disparities with the aim of achieving universal access to a quality higher education.

In 2015, the government of Namibia under the visionary leadership of Dr. Hage Geingob, introduced the Harambee Prosperity Plan with the IDEAL to fight poverty. The Kiswahili word “Harambee” which means, “pull together in the same direction” has been deliberately selected to call for unity and to encourage Namibians to work towards a common purpose.
This well thought out plan has the following ideals:
- to ensure that every Namibian has access to the basic necessities for survival;
- to meet the most basic needs and enable every Namibian to realise their full potential and prosper according to their inherent abilities;
- to strive towards building a Namibia where there are no structural poverty traps;
- A prosperous Namibia should be inhabited by people with decent shelter, access to basic amenities such as safe potable water, access to quality schooling and adequate health services.

In order to attain these goals, five pillars were identified based on effective governance and service delivery; economic advancement; social progression; infrastructure development; and international relations and cooperation. Given the above, it is crucial that Open and Distance Learning be seen and valued as a vehicle to be able to attain the much desired outcomes of this ideal. Harambee starts with each Namibian citizen to make this come true.

As we all know, the formal education system of Namibia is characterised by a pyramidal structure, with selection hurdles at various levels which tend to limit access at these levels. Although there is a slight improvement in the passing rates of our Grade 10 and 12 learners at our formal schools, the performance is not at the desired level. As a result, ODL provides the platform for those who do not get the opportunities to continue within the formal system, to enhance their educational endeavours. For the secondary level programme, NAMCOL was established to fill that gap. At tertiary level, we should commend the University of Namibia – the Centre for Open, Distance and e-Learning- CoDeL, Namibia University of Science and Technology – Centre for Open and Lifelong Learning and the Distance and Open Learning Centre of the International University of Management –, for excelling in the provision of programmes through this mode of study. This is despite the fact that they operate within a system where the majority still believe the traditional face-to-face is the panacea for all challenges in the education system. I want to encourage you to keep up the good work.

Therefore ODL Practitioners, your presence here today, is highly appreciated and valued. Let me urge you to use this platform to share all your expertise from across the region, to learn best practice from each other, and to go back and implement and apply your new knowledge. This is at the root of our goal as educationalists- to promote learning.

As education stakeholders, you have the responsibility of ensuring that the education system in the country produces quality products that will ultimately help Namibia in achieving its National Development Goals and VISION 2030.

Socrates, philosopher, said, and I quote: “Education is the kindling of a flame, not the filling of a vessel.” Let me conclude by extending a word of gratitude to all the delegates present. Be rest assured that ODL will get its rightful place in our education system. Both Ministries of Education acknowledge all your efforts and hard work to ignite the education flame. Keep on running with that torch, and light as many as other torches as possible, so that the education multiplier effect hits this country to change the life of every child to the betterment of families, communities and the nation at large.

With these few remarks, I wish you fruitful deliberations and networking.
I thank you.

HONOURABLE ITAH KANDJI-MURANGI
MINISTER OF HIGHER EDUCATION, TRAINING AND INNOVATION
CLOSING REMARKS

AT THE CLOSING CEREMONY OF THE 3RD
NATIONAL OPEN AND DISTANCE LEARNING CONFERENCE

On the theme:
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• Master of Ceremonies;
• Eminent Keynote Speakers and Presenters;
• Distinguished Delegates;
• Ladies and Gentlemen

I feel honoured and privileged to be part of this closing ceremony. It is also my pleasure to join the Director of Ceremonies in welcoming you all to the closing ceremony.

Today we have reached the end of a very fruitful conference. The Namibian Open learning Network Trust (NOLNet) has proved itself to be a main role player within the context of Open and Distance Learning and Teaching in SADC, but more specifically, made its mark well within the ODL fraternity of Namibia. Before coming here, delegates, presenters and academici have had their own expectations of the conference. As far as growth is concerned, you came here as vessels to be filled with knowledge and best practice, experiences and new innovative tried and tested methods in ODL.

Dear Director of Ceremonies, ladies and gentlemen,

The onus is on us to go and implement the newly acquired knowledge in our own institutions, given our own unique context within each country and Institution. One good advantage of platforms like this is the networking on issues of mutual concern. The education fraternity will never be able to survive without a successful networking structure, and that is why I want to commend NOLNet.

The impact made to contribute to the knowledge-based economy can never be underestimated for the development of education on mother soil. There is no doubt that the conference has proven that open and distance learning is an essential component of quality education. We therefore need to promote and enhance Open and Distance Learning as an important component and driver of our education system. There is no doubt that Open and Distance Learning contributes to poverty alleviation and economic development of our country. Throughout the conference you have learnt how ODL can be used to facilitate better and quality learning outcomes. We are well aware of the pressing need for more secondary schools in Namibia to accommodate all those learners who cannot be accommodated in the formal system.

UNESCO has repeatedly argued that the number of places for secondary and post-secondary learners must increase worldwide, with large-scale growth already being documented over the past decade. In the emerging economic powerhouses of the world, increased access to knowledge and education is crucial to guarantee continued growth for any nation. In our context, it is virtually impossible to build the required number of educational institutions to keep up with the increase in demand. Traditional universities represent a tremendous ongoing financial commitment when physical campuses and classrooms need to be built, maintained, heated,
cooled and secured. It is therefore argued that through distance learning, these costs are significantly less. This translates to more resources being spent on course design, development and student support services. This in turn leads to better student outcomes linked to the higher quality of instruction. Distance learning also:

- is uniquely flexible,
- allows for studies to be combined with working and family life,
- is taken at the correct pace for the student,
- is in tune with what they can afford,
- has also proven itself able to react quickly to specific economic and societal needs.

The aforesaid is but one of the issues pertaining to the cost-effectiveness of ODL given our own African context. There are more, and I am sure through presentations many options have been exhausted for possible implementation in our respective Institutions.

I understand that during these two days of the conference delegates have raised a number of issues to consider further and ideas that will be useful for future research and experimentation. By hearing the summary of the conference deliberations I am impressed and happy to note that you were able to formulate your position and are making a contribution to educational challenges in your respective regions. It is now necessary for all of us to work together and put into practice what we have been discussing here. Therefore, where the conference ends, is where our work begins.

I want to conclude by saying by Vince Lombardi: “The dictionary is the only place success comes before work. Hard work is the price we must all pay for success. I think we can accomplish anything if we are willing to pay the price”. This saying holds a lot of truth: so, in order to do justice to this conference, we have to commit ourselves to improve the quality of educational outcomes through the increased use of best practice processes, procedures and successful implementation of strategies which were discussed here in Swakopmund.

I would like to convey my appreciation and heartfelt gratitude to the sponsors of this conference, the keynote speakers, presenters and session chairpersons and the conference organising committee for bringing us together. I am convinced that the outcome of this fascinating conference provides us with a sound basis for gradually learning to measure the contributions that open and distance learning is making to providing quality education to our citizens across the region and in Africa as a whole, and I would like to wish you all the best with this work. Let us join hands, heads and resources to be an excellent example to demonstrate the impact made by ODL in the world.

On behalf of the Ministry of Education, I would like to once more congratulate all here on a job well done.

God bless you all.
The future of Open Distance eLearning: Realising the 2030 sustainable goal

Prof Mpine Makoe
Institute for Open Distance Learning
University of South Africa
qakisme@unisa.ac.za

ABSTRACT
The future of economic development depends on employers and employees who are well-versed in a host of skills that are relevant for the knowledge economy. To ensure the sustainability of economic growth, higher education institutions are expected to open up opportunities and provide a high level of education to a large number of people. The distance and online education based model has proved to be efficient in widening access to education by providing a cost-effective training to both under-skilled and unskilled people. The provision of education on this scale is even more critical in African countries where there is a huge need for a skilled and trained workforce to enhance the economic growth and global competitiveness. If the problem of capacity for the knowledge economy is not addressed, many of the African countries may not realise the 2030 Sustainable Development Goal (SDG) 4 – “towards an inclusive and equitable quality education and lifelong learning for all”.

To achieve this goal, different players such as policy makers, academics and higher education managers have a role to play in ensuring the sustainability of human capacity development. The aim of this study is to analyse the education policies of Namibia and South Africa and to examine the effectiveness and the efficiency of different components of the policy phenomena. The idea is to determine and identify strategies and actions that need to be put in place in order to assist developing countries to reach Goal 4 of the 2030 Sustainable Development Goal.

Introduction
The development of the knowledge economy requires changing labour market demands for competencies and skills. This growing need of highly skilled qualified workers requires educational institutions to consider the future work force. The ever changing realities and the current challenges of globalisation and of a digitalised world will continue until 2030 with ever increasing complexity. If this is not addressed, many African countries may not realise the 2030 Sustainable Development Goal towards an inclusive and equitable quality education and lifelong learning for all. To achieve this goal, Anwar (2015) challenges universities and open universities in particular to “move from capacity to capability”. This means that learning for sustainability should be learning that leads to economic opportunities, social inclusion and environmental sustainability. Learning for sustainable development is important because it is about “meeting the needs of the present without compromising the ability of future generations to meet their own needs,” according to the 1987 Brundtland report from the World Commission on Environment and Development.

The future of economic development depends on employers and employees who are well-versed in a host of skills such as critical thinking, creative problem-solving, communication, and the ability to work collaboratively (OECD, 2001). These skills transcend any workplace or career path. The education sector has a responsibility to be in gear with 21st century challenges and aspirations through providing the right type of skills and knowledge (Munoz, et al, 2013). To achieve this goal of sustainable development, according to Pavlova (2003), higher education needs to be transformative by being more concerned with “why we are teaching than with how or what we teach” (p. 735). The “why” question challenges higher education institutions to adapt and reform in order to increase the relevance and quality of their educational input to students and the labour market (Hooker, 1997). There is no doubt that there is a need to produce students who are going to add value to the economy
of the country. “Education must play a role in developing a planetary vision in securing life chances, aspirations and futures for young people,” (Pavlova, 2013, p. 731). Therefore there is an urgent need for education systems to transform in order to support the new sustainable development agenda, according to GEM Report (2016), ‘education as usual’ will not suffice. This report also shows that “education will not deliver its full potential to catapult the world forward unless participation rates dramatically improve, learning becomes a lifelong pursuit and education systems fully embrace sustainable development” (GEM Report, 2016).

To ensure the sustainability of economic growth, higher education institutions should work with other stakeholders such as businesses, industries, governments, and non-governmental organisations to identify competencies needed for the knowledge economy as well as to influence education policies and investments. Many of the countries in Africa are still battling with high illiteracy rates, the lowest participation rates in higher education, glaring digital divides, and massive demands for higher education and huge needs for capacity development for the knowledge economy. If all these problems persist, many countries in Africa may not attain the 2030 Sustainable development Goal 4. To achieve the Sustainable Development Goal 4, there is a need for new approaches, political will, resources and policies to support these goals (GEM Report, 2016). Policies serve an important role in this regard because they are developed to provide a guide and respond to the national economic needs and social development goals of a country. Without national policies and frameworks, it is unlikely that technology-enhanced education innovations will be sustained and resources made available.

Despite understanding this important role that education plays, most governments from developing countries are severely constrained by the lack of resources and they struggle to provide the most basic services such as health, education, safety and security. Yet, for them and their citizens, education is a way out of the poverty trap. That is why many of the policies that focus on higher education tend to be economy based. The economic policy goal approach is built on an understanding that higher education should lay a foundation for economic productivity by providing skills and knowledge for a high-quality workforce. In developing educational policies, policy makers tend to draw from the social and economic policies to provide a set of goals, and a vision of what the education system might look like if it were to focus on the social and economic needs of the country. Higher education institutions are challenged to adapt in order to increase the relevance and quality of their educational input to students and the labour market (Hooker, 1997).

National education policies are formulated to address the “reconstruction programmes that combat the deterioration of the physical and human potentialities of the education” according to Jallade, et al (2001). Academic and skills training has great importance and relevance in developing countries in Africa where there is a huge need for a skilled and trained workforce to enhance productivity and remain competitive in the global economy.

This paper analyses national education policies from Namibia and South Africa and identifies strategies and actions that might impact on the implementation of policies in line with the 2030 SDG’s. Most national education policies are driven by the need to improve economic development and promote social cohesion. Therefore they are essential for the formulation of the educational goals of the country. To analyse these policies, Future Research Methodology will be employed to assist us in understanding probable development and to articulate and work towards the desired outcome. The Future Research Methodology is “the scientific study of possible, probable and desirable future developments, the options for shaping them, and their roots in past and present” (Kosow & Gabner 2007, 181).

**Policy Imperatives**

Most of the education policies have focused on addressing equity and access issues. This was done because many African countries are lagging behind in higher education participation rates. Although the higher education participation has increased in many African countries during the last decade, it is still very low when compared to other developing countries. The average African participation rate is 6% as compared to the global average of 26% for the tertiary education age cohort who are enrolled in higher education institutions. Namibia has a 10% participation rate while South Africa has 17% and other neighbouring countries, such as Malawi, have
a very low participation rate of less than 1%. To address these issues many countries such as Namibia and South Africa have put together a number of policy documents that give direction to what countries should do to improve higher education provision in their countries. In his lecture on the Higher Education Landscape in Namibia with Particular Reference to Increasing Access while Improving Quality and Increasing Institutional Diversity*, Professor Rolf Stumpf said that higher education should be expanded if Namibia is to participate meaningfully in the knowledge economy. This applies to all African countries.

The rationale for the expansion of higher education is rooted in a view of servicing a different type of economy which enquires different types of skills and competencies from what we are used to. Higher education institutions are therefore expected to contribute meaningfully to the socio-economic development of the country and the student employability. In recent years, labour markets, especially in developing countries, have benefited from workers who have high levels of education. It is the quality of education that leads to economic benefits (Frye, 2008). The recognition of higher education qualifications provides the basis of preference for employment especially in the knowledge economy. There is no doubt that there is a need to produce students who are going to add value to the economy of the country. Many educational policies focus on the human resource development for the economic needs of the country. Therefore, it becomes necessary for higher education institutions to produce graduates who have the necessary skills to be able to perform in the knowledge economy.

Education and training for the knowledge economy has become a major priority in national policies. The role of policies is to respond to the national economic needs and social development goals of a country. The economic policy goal approach is built on an understanding that higher education should lay a foundation for economic productivity by providing skills and knowledge for a high-quality workforce (OECD, 2003). Labour markets especially in developing countries have benefited from workers who have high levels of education. Frye (2008) argues that it is the quality of education that leads to economic benefits. Therefore higher education institutions are expected to contribute meaningfully to the economic development of the country and the student employability. By so doing, they will also be contributing to the social development goals which are concerned with providing life skills, increasing civic participation, and promoting the culture of peace and non-violence (OECD, 2003).

Policies are chosen as units of analysis because policies are made up of predictive statements of desired outcomes which provide a vision of what the education system should and might look like in future (Jallade, et al. 2001; Pavlova, 2013). These strategic policies, according to Kozma (2005) are meant "to advance the nation's overall educational goals" (p.16). These are different from operational policies which provide a blueprint of what needs to be in place in order to carry out the vision of the country. The desire to develop the country through growing the economy and improving the social conditions of citizens is often used to justify the investment in education reforms (Kozma, 2005). Hence, the development of government policies is often guided by legislations, regulations and the need to reform education systems in order to address the needs of the country. These policies are referred to as strategic policies because they also provide ways in which goals may be reached. Therefore, the focus of this study will be on analysing strategic education policies.

The rationale for choosing strategic policies rather than operational policies is that the former provide a lens to envisage where the country wants to be in future and the latter are operational in nature. Kozma (2005) argues that without a strategic policy to provide a strong educational purpose, the higher education sector will not know which direction to take and what to prioritise in providing skills and training for the economic needs of the country. These policies provide a rationale and a vision of what education systems might look like with the introduction of ICT and ODL and how students, teachers, parents and the general population might benefit from the use of these kinds of education systems. The aim of strategic policies is to motivate change and advance national educational goals that support economic growth; promote social development; and advance educational reform. While strategic education policies may focus on preparing the future workforce to support economic growth of the country, operational policies can spell out the competencies and skills needed to support the strategic goals (Kozma, 2005 and Jallade, et al. 2001). However, clearly formulated strategic policies play an important operational role as a reference for action (Jallade et al. 2001).
Methodology
The national education policies of Namibia and South Africa were chosen as units for analysis. These countries were chosen because they were not successful in meeting the 2015 United Nations Millennium Development Goals and they may be unlikely to reach the SDGs if they do not think strategically about the future. The Future Research Methodology is used in this study not only to predict but to articulate developments that might impact on the desired outcomes (Lang n.d). Although there are several policy analysis methods that can be followed when using the Future Research Methodology, this study will focus on Emerging Issues Analysis which is used to determine likely issues that could develop and require a policy response (Dator, 2009; Lang n.d). This type of analysis tries to take something obvious in the present which could grow into an opportunity in the future. In a nutshell, the emerging issues analysis provides solutions to “present problems lying in future opportunities” (Dator, 2009).

National polices that dealt with issues in higher education sector were chosen for analysis.
Namibia: Education and Training Sector Improvement Programme (ETSIP), Planning for a Learning Nation: Programme Document Phase I (2006-2011), February 2007. National Policy on Adult Learning 2003: Republic of Namibia, Ministry of Basic Education, Sport and Culture, National Policy on Adult Learning, Windhoek, Solitaire Press, July 2003; ICT for Education Policy, 2005; National ODL Policy Development for Namibia, 2007. South Africa: White Paper for Post-School Education and Training (2014); White paper on e-Education (2004); Policy for provision of Distance Education in South African Universities in the context of integration (2014). These documents were read several times and then analysed according to the context of the country in terms of its history and background. The idea was to identify issues that emerged from the past and that may influence the current situation. The policy objectives were also analysed in relation to the goals that the policy wants to achieve.

<table>
<thead>
<tr>
<th>PAST</th>
<th>PRESENT</th>
<th>POLICY OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namibia Vision 2030 - to “improve the quality of life of the people of Namibia to the level of their counterparts in the developed world by Vision 30”</td>
<td>Reforming the colonial education system, Respond to the needs of the country post-independence</td>
<td>Broaden access to quality educational services, Strengthen tertiary education, Ensure high standards and efficient allocation of resources, Developing a national system of knowledge management, Strengthening access to information, culture, and lifelong learning, Leveraging the affordances of ICT’s, Incorporate the needs of the society, Prioritise national development, Increase the number of graduate researchers</td>
</tr>
</tbody>
</table>
### FINDINGS

#### Use of ICTs in Education

An analysis of educational policies from Namibia and South Africa revealed that these countries have common goals of; increasing the number of students in higher education; providing quality education; and creating jobs as necessary to meet the needs of the country. It is also expected that higher education institutions will provide skills that are required for the development of the economy. As the world changes, educational institutions are challenged to address the new realities brought on by technologies, globalisation and the labour market. The use of ICTs in education was also considered essential for the development of these countries. Although ICTs have had a major impact in developed nations where technology has permeated every part of their lives, there is a growing need for ICTs in the developing countries. Findings from the OECD report (2003) point towards technology and innovation as important drivers of recent economic development and a determining factor of employment growth. In analysing the link between ICT based education policies, Kozma (2005) found that policies which had a clear vision on “how the availability of new technologies could increase productivity, improve the quality of life and enrich culture” were more successful than those who did not have a clear goal (p.149). Kozma (2005) argues that well-meaning policies may not achieve what they were set out to do if there is no clear vision.

<table>
<thead>
<tr>
<th>Past</th>
<th>Present</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>South Africa</strong></td>
<td><strong>Vision 2030</strong></td>
<td></td>
</tr>
<tr>
<td>Since 1994, policies have been developed to transform the education sector.</td>
<td>Increase enrolment Improving student access, success and throughput rates Focus on groups that were previously advantaged Digital divide Lack of developed infrastructure and connectivity for ICTs Encourage and support the generation of open electronic content resource development and distribution Distance education provides greater access at lower costs Growing convergence between distance and contact provision</td>
<td>A single, coordinated post-school education training system Increasing diversity of provision Increasing and improving the quality of research Expansion of distance education to complement campus based provision Development of scarce and critical skills for economic development Cooperative relationship between education and the workplace Responsive to the needs of broader societal and developmental objectives Access to ICT infrastructure and connectivity</td>
</tr>
<tr>
<td>Oldest distance education provision (142 years)</td>
<td></td>
<td>To develop South Africa and improve the economic, social and cultural life of its people</td>
</tr>
</tbody>
</table>
Role of Open Distance Learning

In both countries, open and distance education was identified as a feasible approach to improving professional and academic skills for people who are already working and those who, for a variety of reasons, could not access contact institutions. The main principle of openness in education is to address the fundamental right of access to education as outlined in the UNESCO’s Universal Declaration of Human Rights. Distance and online education has been credited with expanding access to education by providing cost effective training for many people who cannot study full time. The provision of education on this scale is even more critical in African countries where there is a huge need for a skilled and trained workforce to enhance economic growth and global competitiveness.

The future of economic development depends on employers and employees who are well-versed in a host of skills that are relevant for the knowledge economy. Many institutions of higher education are required to produce students with appropriate skills and capabilities to match national priorities. The rationale for the expansion of higher education in Africa is rooted in a view of a global knowledge economy leading to an increased demand for new skills and competencies.

Conclusion

To ensure the sustainability of economic growth, higher education institutions are expected to work with other stakeholders such as businesses, industries, governments, and non-governmental organisations to identify the competencies needed for the knowledge economy as well as to influence education policies and investments. The education policy goal approach is built on an understanding that higher education should lay a foundation for economic productivity by providing skills and knowledge for a high-quality workforce. Open education institutions have the responsibility, more than ever before, to integrate sustainable economic development by producing students who are going to add value to the economy of the country.

The focus of the policies from these countries was on economic growth and social development. The government strategies for the national economic growth, social development, and job creation in these REALISI countries have received prominence over time. However, the countries face challenges of low levels of funding for higher education, lack of infrastructure, insufficient knowledge and skills to drive the education vision. All these strategies require major investments both financial and human. If these issues are not addressed in the next 14 years, these countries may not be able reach their sustainable development goals.

References


EMPOWERING LEARNERS FOR EFFECTIVE OPEN AND DISTANCE LEARNING

By Prof Elifas T. Bisanda,
The Open University of Tanzania, P.O. Box 23409, Dar es Salaam, TANZANIA
bisanda56@gmail.com

ABSTRACT

Open and distance learners work under very difficult conditions, as they are mostly unable to get the attention of the tutors and lecturers when the wish to. At times, they must study under solitary conditions with little or no help, except when they can find peers doing the same course. Increasingly, technology has been able to mediate and assists the learners by enabling access to more information, which gives answers to many of the learners’ unanswered questions. Information and communications technology (ICT) has resulted in a paradigm shift in learning, making it less teacher-centred, but more centred on the learner. The African continent is still not very well connected to global internet networks. The cost of internet bandwidth in Africa is still very prohibitive, being 30 times more expensive than in Europe and North America. However, there has been a sudden increase in mobile telephone subscriptions in Africa. On average, more than 60% of the population in Africa has access to mobile networks. In the long term, the mobile technology is seen as the most sustainable agent in increasing internet access in Africa. Internet has made access to diverse learning resources possible, which provide the learner with enriched learning content. ICT mediated learning has also been useful to learners with disabilities, where blind students are now able to access electronic materials available on the internet. Similarly, the deaf can use the internet to communicate with other people without using sign language. It is concluded that ICT empowers ODL learners with unlimited access to learning resources, while social network systems promote student collaboration.

Key words: ICT, flipped learning, assistive technology.

1. Introduction

There is a growing trend of more learners opting for open and distance learning as opposed to face-to-face campus based learning. The traditional face-to-face (contact) form of learning requires a learner to be in the same place and at the same time as the teacher. The learner is wholly dependent on the teacher to impart knowledge to him/her. Teachers are expected to be equipped with enough information and knowledge and to have the intellectual resources needed to deliver content to learners. Students on the other hand, see teachers as repositories of knowledge, and try as much as possible to take note of everything the teacher teaches in class. The teacher is often complemented with text and reference books in the library.

In comparison, distance learners have always been self-learners, requiring occasional support from the teachers, as teachers are usually inaccessible and remote. Distance learners study in solitary environments, unless they can identify peers doing the same course, whereby they organise themselves into study groups. Such learners rely or depend on the supplied study modules, complementing them occasionally with text and reference books. They are provided with a syllabus for each subject to support their efforts in reading across the entire syllabus. Exams are usually set to cover the entire syllabus, and candidates are expected to demonstrate their comprehensive understanding of the subject matter under examination. A face-to-face (contact) teacher on the other hand, limits the examination to content covered in the classroom!
However, due to changes in education technology, and the recent revolutions in information Communications Technology (ICT), the traditional face-to-face classroom practice has begun to change. This paper looks at the changing landscape of teaching and learning and how learners are being empowered for open and distance learning.

2. The History of Distance Education

Distance education dates back to medieval times, where we learn from the Bible, that the Apostle Paul was able to reach many of his established churches, through written letters send by hand. Such letters were written with precision, and amounted to live sermons. Paul is known to have written about 14 such letters, we commonly refer to as ‘Epistles’. However, distance education for academic purposes, is not reported until the industrial revolution times. An advert published in the Boston Gazette in 1728, is the oldest known evidence of distance education. In this advert, Caleb Phillips advertises to offer teaching of short hand by correspondence (https://en.wikipedia.org/wiki/Distance_education found 26/8/2016). In the 1840s, Sir Isaac Pitman was already teaching a system of shorthand where texts transcribed into shorthand were mailed on postcards, and students returned the same for corrections by post. The distance education system received government support with services of the post office, which gave uniform postage rates across England in 1940.

The University of London is reported to have offered the first distance learning degrees, following the chartering of its External Programme by Queen Victoria in 1858. For many years, print media sent through the post office became the main link between teachers and learners. It is reported (De Salvo, 2002), that between 1887 and 1931, nearly 40 000 students had gained admission to and passed the University of London Examinations, whereby nearly a quarter of them had gained bachelor and master degrees. In North America, it has been reported (Pitman, 1987) that correspondence courses were already in swing by 1892. The period between 1892 and 1910 saw a rapid increase in institutions and students engaged in correspondence or distance education. In Australia, the University of Queensland is reported (White, 1982) to have established its department of Correspondence Studies in 1911, making its programmes available to learners in Australia and the southern pacific region.

In the era when the South African regime had already established its policies of discrimination based on colour, black and coloured students who were not allowed on white campus began to gain access to a university education following the establishment of the University of South Africa (UNISA) in 1946. In the apartheid era, UNISA became a unique university which offered its education to people of all races, and was soon able to cross the borders of South Africa into neighbouring countries.

3. The Role of Technology

It was the revolution in media and information technology that perhaps re-shaped the delivery modes and expansion of distance education. Following the invention of radio broadcasting in the early part of the 20th century, in the USA many commercial radio stations are known to have commenced ‘radio schools’ or ‘schools of the Air’ by 1925, when Pennsylvania State College began offering courses by radio broadcasts. The invention of television in the 1940s saw black and white TV becoming popular and in most homes replacing the radio for entertainment, news and even education. This synchronous delivery of distance education became more popular because learners could see the lecturer, and even through a combination of TV and telephone, students were able to interact with the lecturer in a live broadcast. High quality TV has since been seen as a valuable part of open and distance learning which has been used by many open universities since the 1970s when colour TV became widespread (Wetzel, et al, 1994). In the 1960s, Wilbur Schramm (1962) conducted studies to compare the effectiveness of instructional television (ITV) and classroom instruction. His study concluded that there was no significant difference between television and classroom teaching.
The invention of the computer in the early 1950s, has had the greatest impact on open and distance learning. As a learning tool, it has now effectively replaced the Television in most countries. In the 1980s, research was conducted at the European Organisation for Nuclear Research (Conseil Europeen pour la Recherche Nucleaire – CERN) in Switzerland, by a British computer scientist, Tim Berners-Lee, which resulted in the discovery of the World Wide Web, linking hypertext documents to an information system that could be accessed from any node on the network (Couldry, 2012). It is reported that Berners-Lee was able to implement the first successful communication between a Hypertext Transfer Protocol (HTTP) from a client and server via the internet in November, 1989.

Since the 1990s, our culture, commerce, and technology has been transformed by the internet, where we now have near instant communication by electronic mail, instant messaging, voice of Internet Protocol (VoIP) telephone contact and two-way interactive video calls such as Skype. The World Wide Web is used for discussion forums, blogs, advertising, social networking, and e-commerce (online shopping). Even some office work is now done at home, or anywhere, without the need for one to be at the workplace. Due to the widespread deployment of fibre optic networks, increasing amounts of data are now being transmitted at higher and higher speeds, from 1 Gbps to 10 Gbps and more. It is reported (Herbert & Lopez, 2011), that the internet which controlled only 1% of global communication in 1993, had a control of about 97% in 2007. However, the Global traffic clearly shows the weak linkage to Africa and some of the developing countries, as illustrated in Fig. 1. Landlocked countries on our continent have not found it easy to access the marine cable connecting the continents.

Fig. 1: World Map Showing the Global Internet Traffic (source: ITU website).

In the 2000s, the internet became increasingly more useful in the delivery of education. CourseNotes.com was launched at the University of Texas – Austin, in 2000. Then in 2003, WebCT (Web Course Tools) – a content management system was established, popularly known as Blackboard Learning Management platform. Instructors can add to the platform tools such as discussion boards, mail systems, and live chat, along with content including documents and web pages. The latest versions of this software are now called Webcourses. WebCT is significant in that it was the world’s first widely successful eLearning course management system for higher education. At its height, it was in use by over 10 million students in 80 countries (https://en.wikipedia.org/wiki/WebCT#cite_note-goldberg-2).

In 2005 YouTube was launched, and by 2009, YouTube EDU was being used to offer thousands of free lectures
online. YouTube grew to become a global dominant provider of online videos, whereby in 2012, it announced that more than 60 hours of new video were being uploaded to its website every minute, with 75% of the videos coming from outside the USA. By March 2013, it was reported that nearly one billion viewers were visiting YouTube every month.

The most significant revolution in the use of online courseware started when MIT announced that it was releasing all its courseware freely on its website, in 2002. At the time, the site contained courseware from 50 courses. By 2007, the MIT Open Courseware had completed publication of the entire MIT curriculum of over 1,800 courses in 33 academic disciplines (https://ocw.mit.edu/about/our-history/). Several other leading universities followed suit in releasing free educational content online.

The Open Education Resources movement, which had been growing since the MIT OCW, first introduced the idea of Massive Open Online Courses (MOOCs) in 2008. A MOOC is an online course aimed at providing unlimited access and participation through the internet. A graphical representation of a MOOC is shown in Fig. 2. The MOOC uses a platform to provide traditional course materials, including video clips, power point presentations, text content, problem sets and assignments. In addition, MOOCs provide interactive forums among students, professors and teaching assistants.

![Fig. 2 An illustration of a MOOC (https://en.wikipedia.org/wiki/Massive_open_online_course)](https://en.wikipedia.org/wiki/Massive_open_online_course)

The year 2012 is regarded as the year of the MOOC, as it saw a sharp increase in institutions offering MOOCs as well as swelling numbers of learners as illustrated in Fig. 3. Non-profit providers such as Khan Academy and edX were established. A partnership between the University of Pennsylvania, Princeton University, Stanford University and the University of Michigan, saw the establishment of the Coursera platform. It is now the largest MOOC provider with more than 10.5 million learners.

In 2012 again, MIT created its ‘not for profit’ MITx platform. It was renamed edX when Harvard University, UC Berkeley, UT System, Wellesley College and Georgetown University joined. edX is now the second MOOC provider with almost half as many courses as Coursera, with nearly 400 courses and more than 3 million learners.
In 2013, Udacity was established, becoming the third MOOC provider with more than 1.5 million learners. MiriadaX became the first non-US MOOC provider with more than 1 million learners, tapping largely into the large Spanish-speaking market worldwide. In 2012, FutureLearn was established by several UK-based universities including the University of Birmingham, University of Edinburgh, Kings College London, University of Reading, Open University (UK), Monash University, Trinity College Dublin, Warwick University, University of Bath, University of Southampton and Monash University. Large corporations such as Google, Microsoft, IBM and Zendesk also joined the FutureLearn consortium. It now also has close to one million learners. On March 16th, 2015, the University of Cape Town, released its first MOOC, Medicine and the Arts on the UK platform, FutureLearn.

4. The Challenge of Internet Access in Southern-Saharan Africa

Despite the many gains recorded on internet access in the rest of the world, the situation on the African continent remains gloomy. Statistics from ITU show that by the end of 2016, 3.9 billion people representing 53% of the World’s population will not be using the internet. In the Americas and the CIS regions, about one third of the population is offline. In Asia and the Pacific and the Arab States, the percentage of the population that is not using the internet is about 58%. However, in Africa, 75% of the population is offline compared to only 21% of Europeans.
Table 1 shows the percentage of individuals using the internet in selected countries, with a focus on Southern Africa.

Table 1 Percentage of Individuals Using Internet in 2005 and 2015

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>2005</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>1.14</td>
<td>12.4</td>
</tr>
<tr>
<td>Botswana</td>
<td>3.26</td>
<td>27.5</td>
</tr>
<tr>
<td>Malawi</td>
<td>0.38</td>
<td>9.3</td>
</tr>
<tr>
<td>Mozambique</td>
<td>0.85</td>
<td>9</td>
</tr>
<tr>
<td>Namibia</td>
<td>4.01</td>
<td>22.31</td>
</tr>
<tr>
<td>South Africa</td>
<td>7.49</td>
<td>51.92</td>
</tr>
<tr>
<td>Swaziland</td>
<td>3.7</td>
<td>30.38</td>
</tr>
<tr>
<td>Tanzania</td>
<td>1.1</td>
<td>5.36</td>
</tr>
<tr>
<td>Zambia</td>
<td>2.85</td>
<td>21</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>2.4</td>
<td>16.36</td>
</tr>
<tr>
<td>Nigeria</td>
<td>3.55</td>
<td>47.44</td>
</tr>
<tr>
<td>China</td>
<td>8.52</td>
<td>50.3</td>
</tr>
<tr>
<td>UK</td>
<td>70</td>
<td>92</td>
</tr>
<tr>
<td>USA</td>
<td>67.97</td>
<td>74.55</td>
</tr>
</tbody>
</table>


However, Africa has seen a rapid growth in mobile telephone subscribers.

While in 2005, less than 10 people out of 100 inhabitants possessed a mobile phone, as of the end of 2015, on average there were more than 75 subscribers per 100 inhabitants in the Southern African region as shown in Table 2.
The problem of internet access in Africa is made worse by the very high cost of bandwidth. Africa continues to struggle with low bandwidth and very slow internet, hence it is not able to benefit from the many online resources which are easily downloadable elsewhere. Table 3 shows comparative costs of bandwidth on various continents on the globe. Whereas, one Mbps per month costs just 5 USD in Europe, it costs 32 USD in Asia, and 300 USD in Africa. Most mobile providers only provide 3G internet, and 4G is available in only a few cities and prime locations.

### Table 3 Cost of Bandwidth across Regions

<table>
<thead>
<tr>
<th>REGION</th>
<th>PRICE/MBPS/ MONTH (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>5</td>
</tr>
<tr>
<td>North America</td>
<td>8</td>
</tr>
<tr>
<td>Asia</td>
<td>32</td>
</tr>
<tr>
<td>Latin America</td>
<td>32</td>
</tr>
<tr>
<td>Australia</td>
<td>100</td>
</tr>
<tr>
<td>Africa</td>
<td>300</td>
</tr>
</tbody>
</table>

An illustration of variations in bandwidth costs is given in Fig 4. It shows that to transfer
10 Gbps from London to New York costs only USD 6 500, while it costs USD 35 000 from London to Singapore, and USD 112 500 from London to Johannesburg.

**Fig. 4: Median 10 Gbps wavelength prices on major international routes.**


### 5. Shift from Teacher-Centred to Student-Centred Learning

Open distance learning has traditionally demonstrated a shift from teacher-centred learning to student-centred learning. However, with the intervention of ICT, it is now becoming common to see classroom-based teaching adopting the same technologies, and therefore becoming student-centred. Self-learning is facilitated by social networking services, (SNS), where peers and experts communicate easily. Secondly, the existence of a Learning Management (LMS) System or a Knowledge Management System (KMS) that provides limited communication and collaboration, and which allows students and tutors to interact is another important feature that supports student-centred learning. Thirdly, existence of a wide scope of learning materials, both static, dynamic and crowd-sourced materials is an important aspect.

**Students have available to them, a diversity of materials, including:**

- Faculty created content
- Published materials: Textbooks, Newspapers, Journals, Magazines, etc.
- e-books, digital books
- Web Sources: URL
- Social Media: YouTube, Pinterest, educational Facebook, Instagram, etc.
- Student created content
- Crowd-sourced learning materials: Open access resources (OER, OCW, MOOCS)
The modern ODL and face-to-face students are facing a changing learning environment, which is bringing them closer. This convergence of ODL and F2F learners has created a new gap between the learners and teachers, as the role of the teacher keeps changing. The following changes have been noted recently: Changing network technology from wired internet to wireless; improvement of devices from PCs to portable smart devices; changing web technology from 1.0 to 2.0 and 3.0; improved communication from IoP, 1\textsuperscript{st} generation SNSs to 3\textsuperscript{rd} generation SNSs. All these have influenced the change of delivery from teacher-centred learning to student-centred learning. A lot is changing in the types of materials used, availability of learning materials, scalability of learning, student demography, attitudes of students, student support, learning platforms and ways of assessment and examination, as illustrated in Table 4.

Table 4: What is Changing in the Learning Landscape, Then and Now.

<table>
<thead>
<tr>
<th>WHAT IS CHANGING</th>
<th>THEN</th>
<th>NOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook</td>
<td>Paper based</td>
<td>e-books, digital textbooks</td>
</tr>
<tr>
<td>Availability of learning</td>
<td>Teacher prepared</td>
<td>OCW, OER, MOOCs, SCC</td>
</tr>
<tr>
<td>materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scalability of learning</td>
<td>In classroom</td>
<td>Cross-classroom, global, virtual classroom</td>
</tr>
<tr>
<td>Student demography</td>
<td>Traditional university student</td>
<td>Non-traditional university student, casual learners</td>
</tr>
<tr>
<td>Attitudes of students</td>
<td>Consumer of knowledge</td>
<td>Prosumer, Trsumer, Modisumer</td>
</tr>
<tr>
<td>Student support</td>
<td>Just in place, semester based</td>
<td>Just-in time, all the time</td>
</tr>
<tr>
<td>polling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Platform</td>
<td>Closed</td>
<td>Open, Mobile</td>
</tr>
<tr>
<td>Examination</td>
<td>Paper handwritten, scheduled</td>
<td>On-demand, anytime, online</td>
</tr>
</tbody>
</table>

Our learners (ODL and Non-ODL) can be empowered by self-learning through a number of practices. The first, is to ensure that student activities consist of pre-class, in-class and of post class activities. Then the focus has to be on interactive in-class activities and self-learning using learning materials prepared by the teacher. This self-learning prepares the students for in-class activities, resulting in the phenomenon popularly known as the ‘Flipped Classroom’.

Flipped learning is a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides the students as they apply concepts and engage creativity in the subject matter. We simply describe flipped learning as doing lectures at home and then the homework at school!

6. Assistive Technology for Learners with Disabilities

In real life, we all know how it is difficult for people with a visual or hearing impairment to communicate with other people. Communication between visually impaired people and normal people is attained through speech, and can also be typewritten, whereby a blind person can use an ordinary typewriter to type a text that a normal person can read. However, to communicate a written script from a normal person to a person with a visual
impairment would require the use of Braille, a special code that most normal people don’t understand. Even when a normal person uses ordinary script, the blind person will need someone to read it out for him/her. In the same context, people with a hearing impairment communicate using sign language. Only normal people trained in this language will be able to understand and communicate back. However, people with a hearing impairment are able to see, and some have been trained to read ordinary script. When compared to those with visual impairment, the deaf in our society are very difficult to detect, and consequently they have largely been ignored. Most have missed chances for education, and have been left at the bottom of the economic ladder in our society. The few that have been empowered with basic education have been unable to proceed to higher education due to absence of facilities to support their learning.

The Open University of Tanzania is an open and distance learning public institution, established in 1992. Since its establishment, the university has put emphasis on equal opportunity, allowing students with different types of disabilities to enrol for its certificate, diploma and degree programmes. To support learning, the university established an audio recording studio to convert type script into sound, using tape recorders, to support learners with a visual impairment. Each student had to acquire a tape player that would play back the sound recordings as the student listened carefully and took notes in Braille. Students with a visual impairment depended on normal persons to read any extra texts to them which had not been recorded into sound. When it came to writing tests, assignments and examinations, the student with a visual impairment had to use an ordinary typewriter to type answers or essays as needed. The student, had no chance to correct any typing errors or mistakes, neither does such a situation allow the writer to review the work typed. The university realised that the learners with visual impairments were taking far too long to complete their studies. They were encountering many hurdles, including lack of access to digital content that was being widely used by other students. Without access to ICT, the students were facing a more serious handicap, making it even more difficult for them to complete their studies.

In 2011, the Open University of Tanzania launched the first training on ICT skills for people with visual impairment. The training was supported by the Tanzania Education Authority (TEA) and the Sight Savers International (SSI), who provided laboratory equipment and Dolphin Pen software, capable of reading out text on a computer screen. The Dolphin Pen comes in a flash drive, and can be used on a stand-alone PC. The software is compatible with most operating systems and is available as an add-on for PCs running Linux or Windows, whereas Mac OS computers use a built-in screen reading function. Due to the high subscription costs, ICT experts of the university managed to configure an open source version of screen text recognition software, now called the Non-Visual Desktop Application (NVDA), and used it successfully for training. The main instructor is blind himself. In general, the trainees are provided with basic knowledge on how to use a computer. The trainees are first given an understanding of the components of the computer and their various functions. They learn how to use the Keyboard for both entering and navigating the computer. Learners are introduced to the NVDA software, taught how to install, configure, and use it with the assistance of headphones to listen to commands and the text which is being scanned. Then they start to learn how to create, save, and open documents using Microsoft Word. At this stage, they are introduced to the internet, how to use search engines, how to create, send and receive emails, how to read online content, in particular the local newspaper. One can see the excitement of the learners, when for the first time, they are able to read the local papers without the support of anyone!

Having recognized the serious need of people with hearing impairments to acquire ICT skills, the Open University of Tanzania received support from Deaf Aid International, through which a laboratory and training workshop was established for teaching ICT to people with hearing impairments. The course enabled them to develop competence in facilitating deaf learners in learning ICT skills following the CISCO curriculum. The first ICT training for the deaf was launched on 10th April, 2015 at OUT in which 15 (7 females) deaf people benefitted from the training. The skills acquired included general knowledge on the use of a computer, installation of software, various MS Office applications, the internet, email, and graphics.
Under normal circumstances, it is very difficult to recognize or identify a person with a hearing impairment. These people move freely without any support, though they have to be careful not to be knocked down by vehicles as they cannot hear the noise of an oncoming motorized vehicle. They do normal manual work, and you will rarely find them begging. However, in Africa, due to the lack of special facilities and expertise, most people who are deaf are illiterate. A few parents have managed to take the affected children to special schools for the deaf, but basic education is all they can get. The higher education sector has no provision to support learning for the deaf at the tertiary level.

The training provided by the Open University of Tanzania’s special unit for students with disabilities, has enabled deaf people to acquire basic skills for using computers, plus additional skills on the repair and maintenance of ICT equipment. It is quite interesting how the trainers and trainees managed to develop their own sign language, which they now use comfortably in training and practice.

The acquisition of ICT skills for both the blind and deaf, is a liberating factor. The university has recently discovered that blind trainers are engaging in email exchange with their deaf instructor counterparts. Under normal circumstances without ICT, it would be impossible for a deaf person to communicate with a blind person and vice versa, without an intermediate normal person who understands sign language. The acquisition of ICT skills has also increased the employability of students with visual impairments. Recently, three of the trainees of the programme have been hired by public and private sectors, where they are performing quite well. There is evidence, that blind and deaf people with ICT skills have a better chance of proceeding at the same pace with higher education than normal people.

7. Conclusions

Following the foregoing presentation, the following conclusions can be drawn.

Firstly, that Open Distance Learning is more relevant to individuals with a self-learning ability. Traditionally ODL learners have largely been limited to tutor-generated content pedagogically designed for distance learning.

Secondly, through ICT, most modern ODL learners have been empowered with unlimited access to learning resources, accessed through the internet.

Thirdly, is that the increasing availability and use of social network systems has helped in promoting student collaboration, thus bridging the distance between learners, who could be thousands of miles apart.

Fourthly, the mobile phone has become the main ICT resource for ODL learners in Africa, the majority of whom live in rural areas where power and wired internet are not available.

Finally, it is concluded that ICT is an important tool for empowering learners with various disabilities. Barriers of access to digital content are removed when the blind are empowered to use ICT for learning, while at the same time, communication can be established with deaf counterparts.
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ODL INNOVATION, PEDAGOGY AND TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT

By: Dr. Delvaline Möwes
Director
Centre for Open and Lifelong Learning (COLL)
Namibia University of Science and Technology (NUST)

- Master of Ceremonies
- Honourable Dr. Itah Kandji-Murangi, Minister of Higher Education, Training and Innovation
- Honourable Anna Nghipondoka, Deputy Minister of Education, Arts and Culture
- Dr Hertha Pomuti, Chairperson of the NOLNet Board of Trustees, in her absence,
- Fellow NOLNet Board Members Present,
- NOLNet Management Committee,
- Heads and Representatives from NOLNet Partner Institutions and other ODL Providers in the region and beyond- from as far as Germany;
- Professor Bisanda from the Open University of Tanzania;
- Professor Makoe from Unisa;
- Ms Victoria Amakali – NOLNet Executive Secretary,
- Ministry of Education Officials,
- Colleagues,
- Distinguished invited guests,
- Ladies and Gentlemen,

Allow me to start by expressing my gratitude to the NOLNet Executive Secretary for inviting me to deliver this Keynote address. The sub-theme for this Keynote address: ODL Innovation, Pedagogy and Technology for Sustainable Development, resonates strongly within me – it is at the core of my mandate as Director of the Centre that I lead at the Namibia University of Science of Technology. It is therefore indeed a privilege to speak to you today about phenomena and topical and dynamic issues in ODL that are very close to my heart.

To the Chairperson of this 3rd NOLNet ODL Conference, Ms Rholene Bok and your Team – as far as I can recall, whenever you have steered the team to organise an event, I have enjoyed the excellent arrangements carried out with precision and passion. It is always such a joy to experience the warmth and generous hospitality from you and your team as our hosts – with the underlying currents of strikes and unpleasant happenings in the education sector, not only next-door in South Africa, but right here on our doorstep. It is indeed a sparkle of bright light and the positive energy of being part of this Conference is contagious– Thank you so much.

Now Ladies and Gentlemen, before you think I’m busy giving the Vote of Thanks, let me get back to the actual reason why I am standing here in front of you: I want to start my address with a simple question:

Can ODL Innovation, Pedagogy and Technology support and enhance Sustainable Development?

The likely response and answer to this question from ODL Practitioners would be: The conventional methods of education and training within the classroom are inadequate to reach our dispersed populations who are spread out across our countries and regions. So YES, ODL Innovation, Pedagogy and Technology can play a role as more options are availed to our citizens. One effective ICT Strategy for education and training is undoubtedly distance learning. We all know that ODL has opened up access to education to millions of learners across the world and is an option worthy for closing the gaps of access, costs, equity and quality. Many governments have adopted ODL to reach the unreached. Never before in history has ODL been so vital to the economic and social
development of countries. And never before have opportunities to reach so many students been so abundant and so possible. This makes our role as ODL practitioners more important than ever. As the Asian Development Bank puts it, quoted by the former Vice-President of COL, Vis Naidoo: “higher education institutions operate as incubators of the innovation and creative thinking needed for an economically competitive society.”

In the same vein UNESCO has identified higher education as being critical in addressing the sustainable development goals that the organisation has set post-2015. These global goals emphasise the significance of higher education and ODL in; reducing poverty, improving health, empowering women and protecting the environment. UNESCO’s Director General, Irina Bokova sums it up in this way, according to Naidoo: “The Evidence is Loud and Clear: Education saves and transforms lives”.

However, I want to argue that it’s not just about access to ODL and availability of Technology. There are other factors to consider if we want to make claims that we do reach the unreached …that we do deliver quality education …that we do enhance sustainable development. In this context, in her recent address to the Open University Vice-Chancellors and Heads of ODL Institutions who convened in Kuala Lumpur with ODL Thought Leaders and Distinguished ODL Scholars, Professor Asha Kanwar, COL’s CEO and President said : “We know that distance and eLearning have opened up access and promoted equity, however, as research universities and conventional campus-based institutions adopt blended learning and massive open online courses (MOOCs), ODL faces increasing competition and a rising focus on its quality and credibility…with a view to achieving Sustainable Development Goal 4.

One of the Frameworks for Action for achieving SDG4 by 2030 is to “develop policies and programmes for the provision of quality distance learning in tertiary education”. Yes Ladies and Gentlemen, there is indeed a pertinent call on us as ODL Practitioners to contribute towards achieving the SDGs…so gone are the days when we thought that ODL is not recognised, that it’s second best that it’s an afterthought….REAL action! And not just having a Policy in name….a Policy which is collecting dust on our shelves….No, it’s time to walk our talk, because at the very Core of our Policy is the design and delivery of QUALITY EDUCATION. We can’t conveniently excuse ourselves and play the ignorance game in claiming that others are imposing this requirement on us ….No no no….if there’s one thing that we’ve ensured with the development of our National ODL Policy…it is OWNERSHIP! We’ve consulted widely and involved all ODL Practitioners in the country, including the Private ODL Providers. Ensuring quality in our ODL delivery is a requirement that WE have set….and hence, a requirement that WE should implement.  My fellow Board Members, ODL Practitioners, Colleagues….The Role of ODL has become more important than ever before …as we as Commonwealth Member States strive to achieve quality education and lifelong learning for all.

And it is these factors that I want to unpack today. We all know that Technology enables change and adds value to the sustainable development process. BUT ….BUT Ladies and Gentlemen, Technology by itself does not create sustainable development. It is only effective, sustainable and worth the effort if it is integrally linked to a broader, more comprehensive education and development strategy.

The education sector in many countries invests heavily in ICTs. Unfortunately, the competence to use this technology efficiently may be wanting. Education should be driven more by learning than by technology to succeed. I therefore put forward the argument that the magic of dazzling technology must be matched with appropriate pedagogy.

The quest for sustainable development requires a change in attitudes, and intercultural and global cooperation. The combination of Technology and Transformative Pedagogy can be efficient tools for such a change. As I alluded earlier, conventional education is inadequate to meet the challenges of a global environmental crisis. Education for sustainable development demands a new Transformational Pedagogy. Bjørke, a Senior Consultant and Lecturer in Norway, explains that: “Conventional education systems are to some degree based on Copy, Cram and Reproduce” or the CCR-Pedagogy”. Many of us know that Paulo Freire calls it the “Banking Pedagogy”. I’m pretty sure Ladies and Gentlemen, that you all agree with me that this kind of education is
inadequate to meet the challenges of our times. The future is increasingly unpredictable, and sustainable development therefore demands a quality education system that builds generic and problem solving skills, creativity, innovation and critical approaches to established “truths”.

According to Thabo Mbeki, when he delivered a speech at the UNESCO Conference on Education for African Renaissance in the 21st Century: “If the next century is going to be a truly African Century, for social and economic progress of the African people, the century of durable peace and sustained development, the success depends on the success of our education systems. Nowhere in the world has sustained development been attained without a well-functioning system of education, without a universal and sound primary education, without an effective higher education and research sector, without equality of educational opportunity”.

Already in 2000, the World Education Forum argued that: “Reforms of educational management are urgently needed – to move from highly centralised, and command-driven forms of management to more decentralised and participatory decision-making implementation and accountability and to harness new ICTs”. In our context of educational management this means that local communities and industry should be involved in the design of the curricula in order to contextualise and adapt to local conditions. Systems should be flexible to choose different educational approaches best suited to the learning objectives. Teachers and lecturers should be competent and offered regular training through lifelong learning using online education. Modern technologies can be important tools to achieve sustainable development and provide this lifelong learning through online education, however, the experience is also that many lecturers feel overwhelmed by the new technology. To avoid that, schools, remote areas, or even entire countries, are left behind. Measures are needed which close the digital divide, instead of accelerating it and which include, rather than exclude. Thus, there is more to education than technology. Technology must be placed in a productive context. We all buzz about eLearning, yet so many times we find that the common understanding of eLearning is that the teacher teaches the traditional way, while students use the Internet as a supplementary source of information. Emphasis is on traditional ‘instructivist’ teaching, where the point is “getting the message across”, and in the Freire terminology “banking” the “correct” answer in the students’ heads. We transmit information from the one “who knows” to those “who do not”. Focus is on the teacher and on content delivery. Of less interest is the cognitive learning processes that should take place within the minds of the recipients.

The reality, ladies and gentlemen, is that lecturers and students are increasingly exposed to current global events. Access to an ocean of current Internet information necessitates that the traditional, instructivist teaching mode should change. Real meaningful learning involves more than cramming a student’s head with facts and fragments of information. Our students need to understand, see connections and challenge information presented. They should be able to apply, synthesise, and draw meaningful conclusions in a concrete context. Emphasis must be on learning how to learn and how to understand. Higher order thinking and cognitive skills are different from cram schools in which the goal is to enable students to “parrot learn” and unthinkingly repeat information that is deemed necessary for a particular examination. In this information age, students should be able to be critical thinkers and have the ability to search for relevant and reliable information to solve a problem and critically assess the quality, rather than being passive recipients of decontextualised information.

Capitalising on ICTs in education therefore demands communication between the tutor and the student and amongst students. Freire maintains that: “Only dialogue, which requires critical thinking, is also capable of generating critical thinking. Without dialogue there is no communication, and without communication, there can be no true education.”

So, when the technological steps have been managed well, the next step is that of a transforming and activating pedagogy for the information age to enhance and steer development in a sustainable direction. A pedagogical challenge is to find solutions which make online education work despite low broadband capacity and limitations of affordability to our students. Online education does not have to be synchronous with same-time interaction between students and teachers. Asynchronous eLearning can be just as effective, and in many contexts work even better than the more technologically demanding synchronous modes.
Working with technology invariably involves the delegation of responsibility to our students and successful learning outcomes will depend on the ability of our students to work independently and autonomously from the teacher, and, increasingly, to take control of the learning process. It is my argument that, within the right context, asynchronous modes facilitate this, and transfer the power from the lecturer to the students. Watkins (1996) defines learning as a social process and relates it to four themes: active learning, collaborative learning, learner responsibility and meta-learning or learning about learning. In this definition asynchronous eLearning is seen to promote metacognitive activities. Time to reflect, combined with relative anonymity, may encourage openness, honesty and deeper thoughts that otherwise would not have come up in a “real-time” discussion or in a face-to-face setting.

Gone are the days when our Region and our Continent could argue against the offering of eLearning. Infrastructures are not necessarily absolute obstacles. The reality and the fact that appropriate ODL pedagogy in the use of technology can facilitate meaningful learning, is rapidly catching up with the pessimists. Statistics also show that Internet usage growth is highest in developing countries. It is therefore imperative that our ODL practitioners are trained in the applications of ICTs and the corresponding pedagogical approaches. eLearning pedagogy is not intuitive, but a skill that our ODL practitioners and lecturers need to learn. We need to be very mindful that Technology is the tool which enhances communication, while the pedagogy supports meaningful interaction and learning. A mere transfer of information is insufficient and does not support a rich meaningful learning environment. It is thus very important that we develop competence among our lecturers and ODL practitioners. We need to step up the quality of ODL and capacitate our teachers and faculties in eLearning pedagogy and online tutoring. Our country and our region cannot stay behind while the rest of the world is moving forward. This is surely one way of meeting the requirements for education without spending most of our available capital on campus constructions, buildings and centralised facilities.

Technology is a vital tool for development. However, only technology is not enough. Education must always be more learning- than technology-driven. When venturing into eLearning, there are many factors to consider. A crucial factor is the appropriate pedagogy. Transformative, collaborative pedagogy to facilitate good online learning environments is a definite recipe for success to encourage critical thinking; meet the challenges of a global economic and environmental crisis; and steer development in a sustainable direction. As ODL Practitioners, let us continue to walk our talk. I want to leave you with a quote from Steve Jobs: “The only way to do great work is to love what you do. If you haven’t found it yet, keep looking. Don’t settle for less. As with all matters of the heart, you’ll know when you find it and you will carry it with dignity, self-respect and passion”. And that’s what my team and I design and deliver when we talk ODL, hence my earlier statement that it is at the core of my mandate when leading ODL at my University.

This quote ties in and speaks as the quote of a hero to many of us, the late Nelson Mandela, when he said: “Education is the most powerful weapon which you can use to change the world. It always seems impossible until it is done.”

With that ladies and gentlemen, from my team and I who took part in facilitating the OER Skills Development and Awareness Pre-Conference Workshop on Tuesday and assisted with the Organising of this great event, we thank you again for the opportunity and for your kind attention. We wish you a productive few weeks left of the 2016 academic year and trust that you will end it off successfully. Travel back home safely, Season Greetings, a Merry Xmas and Yes!!! It’s almost that time again….a Prosperous New Year.
SUB-THEME 1: INTERGRATION OF ICTS IN TEACHING, LEARNING AND ASSESSMENT

- Boingotlo Moses: The experience of running online programmes at the BOCODOL
- Martha Mosha: Learners Acceptance of Moodle at the University of Namibia: The case of Department of Information and Communication studies
- Josephina Mwadhina Naboth: Mobile Learning Pedagogy in Supporting ODL students at the International University of Management
- Hyasinta Kessy: Effects of Instructional Media on Learning
- Dagmar Oertel: Mobile Learning in Namibia – A concept for a mobile application to support German language learners in the tourism sector
- Madejski, Eugene (MGL): Investigating into the Integration of ICTs in Teaching, Learning and Assessment: Case study of logistics and transport staff and students at the Namibia University of Science and Technology (NUST).
- Dr. Rwejuna Zacharia Reginard, and Ramadhan Rashid Singano: Challenges of ICT Integration among Distance Learners at the Open University of Tanzania: A case of Tanga Regional Centre
- Tim Kocher, Prof. Dr. Ulrike Haß, Prof. Dr. Bernhard Schröder (University of Duisburg-Essen, GER): Blended learning: how online-courses improve offline-lectures
- Mr Erkkie Haipinge and Gerhold B Kooper: Promoting Reusable Learning Objects in Moodle Learning Management System Through Sematic Annotations
- Erkkie Haipinge Repurposing MOOCs for local contexts: A framework for inter-institutional collaboration in the design of MOOCs for Open and Distance Learning in Namibia
- Dr. Lekopanye Tladi: ODL and Technology that could Enhance Sustainable Development. The Experiences of Running online Programmes at the BOCODOL
- Dr Nchindo Mbukusa and Jennie Lates: Utilising ICT to Optimise Learning in the Bachelor of Pharmacy Course
- Wilhelmina Louw: Open Educational Resources: A Case for NAMCOL
THE EXPERIENCE OF RUNNING ONLINE PROGRAMMES AT THE BOCODOL

Boingotlo Moses (Ms)
Botswana College of Distance and Open Learning (BOCODOL)
Private Bag BO 187,
Gaborone, Botswana
bmoses@bocodol.ac.bw

and

Montlenyane Madisa
Botswana College of Distance and Open Learning (BOCODOL)
Private Bag BO 187,
Gaborone, Botswana
bmoses@bocodol.ac.bw

The use of technology and ICTs in education is spreading fast worldwide and it is a massive way of spreading knowledge. It has been noted that “the internet is the world’s largest and most powerful computer network connecting personal computers, sophisticated mainstreams, and high speed supercomputers around the globe” Tilwani, A. (2013, p ). To keep abreast with the rest of the world, the Botswana College of Open and Distance Learning (BOCODOL) started infusing technology in running some of its educational programmes. It started this initiative by offering the Certificate for Distance Education Practitioners in 2012, as an online programme for students from Botswana and other countries of Southern Africa, to equip them with basic skills in Distance Education. The use of eLearning to deliver the CDEP programme was to bring the students from the Southern African Development countries (SADC) to one eLearning platform, the MOODLE, for tutorials and to share learning experiences. This paper examines the effectiveness of using eLearning as a mode of programme delivery, by tapping from the experiences, problems and any other difficulties encountered in running an online programme. The methodology used to collect data for this presentation was through a questionnaire administered online for the students enrolled in this programme, as well as for their tutors. This was to get first-hand information from users showing how they managed to go through the programme, the problems they uncounted as well as their success. Looking at most of the problems which were brought forward, such as lack of internet connectivity, or students not being able to access the host institution website, the paper recommends some improvements on the College internet services so as to try and pave the way for the incoming eLearning programmes which are planned.

Key words: Experiences, technology, online, e-learning, access, progression, and effective

Introduction

Mankind is living in a modern world where technology is drastically changing the way we live, we think, act and learn. By harnessing technology, in less than a minute one person can communicate with another in another country or continent, sharing knowledge and experiences. As such, online learning is widely used as it is believed that it enables, eliminates and empowers. (Anson Chong: 2003). Online learning is said to enable the distance learning professionals to set up internet courses from scratch using free tools as an alternative to proprietary tools for corporations. Online learning can enhance traditional forms of education and can take place in the classroom, or workplace, it can be done at home, at online access points or at a public library.
Today with busy schedules and the demand of modern technology, people are turning to Distance Education (DE) to bridge the gaps in their education and training. For some it could be a requirement at work for them to improve their skills either for progress, promotion or to fill a vacant position. Yet for others it might be commitments at home such as parenting, being the sole breadwinner where they cannot leave the family for long periods without full pay to support them. For adults with other responsibilities, time is a precious commodity and self-motivation determines how well the time available is managed, (Schmidt, E. K & Gallegos, A. 2001). Therefore a very accommodating distance education programme would assist them in managing their time for a purpose.

As argued by Martin, Moony and Davey, eLearning and other distance education modes could provide for the learner by facilitating the delivery of the right information and skills to the right people at the right time. Thus it is possible through adult distance education for people to attend a variety of courses without necessarily going into the classroom. Thus the learners would require programmes that would best cater for their desired needs and circumstances. Hence looking at their As distance education is widening, especially in Southern Africa, it has been found that there is still that missing link where Distance Education Practitioners need some basic skills for running distance education institutions. Hence the Certificate for Distance Education Practitioners (CDEP) was found fit as a foundation programme that could help equip DE practitioners with basic skills and knowledge for working in a distance educations set up, to close this skill gap. The programme is offered online so that it allows all Southern African Development Countries (SADC) to train their people via distance education.

**Background**

Botswana College of Distance and Open learning is a leading distance education institution in the country and was established by an act of Parliament of 1988 (Revised National Policy on Education (RNPE: 2004, recommendation number 87) to provide education to out of school youth and adults. The college runs both school equivalency programmes (high school) and tertiary education programmes ranging from Certificate courses to degree programmes. Apart from CDEP, all these programmes are supported by face-to-face tutorials and the printed self-instructional materials, which the students are given upon registration. CDEP for now is fully administered online, through the Modular Object-Oriented Dynamic Learning Management Environment (MOODLE) or platform.

The CDEP program was introduced in BOCODOL in 2012 coming through the office of the SADC-Centre for Distance Education (SADC-CDE). SADC-CDE has been formally recognised as a subsidiary SADC institution, to contribute towards improving and strengthening distance education and training systems in the region through collaborative efforts, (ODL Newsletter April-June 2013). Hence its selection of the BOCODOL to offer the long term training at certificate level in line with SADC Secretariat bidding processes (SADC-CDE ODL Project: 2010:p2). They argue that the choice to make BOCODOL offer the certificate program is because they claim to have assessed the College’s relevance and adequacy. SADC-ODL Project observed that BOCODOL is a public ODL institution whose mission is to continuously provide quality open and distance education, research and public services for sustainable socio-economic development of Botswana in particular, and the international community in general.

According to the SADC-ODL Project the mandate of the certificate programme is to serve as an introductory course that provides basic grounding in ODL for practitioners in the region. The programme is also meant to provide a career path for ODL practitioners, “which entails that it should have some amount of linkage in terms of content, with the training workshops that will be offered at Centres of Specialisation as well as with some Diploma and Master’s Degree courses offered by other institutions in the region” (page 3). Prior to BOCODOL being given this mandate, the programme was initially offered by the University of South Africa (UNISA). The training needs assessment conducted by SADC-ODL Project in SADC member states “as classified by ADF countries showed a need to train ODL practitioners in key areas including concept and application of ODL, planning and management of ODL, instructional design and materials development, learner support, monitoring and evaluation, quality assurance, use of ICTs and research” (page 3). The content of the Certificate programme does indeed cover those specified key areas in its seven modules.
Purpose of this Paper
This paper examines the effectiveness of using eLearning or online learning technology as a mode of programme delivery, by tapping from the experiences, problems and any other difficulties encountered by users during their term of studying the CDEP online programme at BOCODOL. The methodology used to collect data for this presentation was of cross-sectional descriptive design whereby a questionnaire was administered online to students enrolled in this programme as well as their tutors, to tap on their experiences as well as any problems they uncounted during their progress and or success. Collectively what is derived from the students’ experiences and progress, is assumed will help to identify improvements and recommendations for the way forward as the programme unfolds.

Technology (eLearning/ online learning)
eLearning components include a learning management system (LMS), or learning content management system (LCM), content, collaboration, testing and assessment, skills and competency, e-commerce and internet video-based learning. (Alavi, Maryam 1994 cited in Veeramani M. 2010). BOCODOL uses the MOODLE - LCM as the instructional method to engage the learners. Online leaning can enhance traditional forms of education. The nice part of it is that like all distance education modes of learning “it may take place in the classroom or workplace, it may be performed at home, at online access centres, or at a public library” (www.excellssior.edu/web/student-online-success-guide) Hence the CDEP programme enrolled students from the SADC region and these students learn from their home using computer technology.

The course content of the programme is uploaded on the MOODLE platform for students to access. All other forms of support to students such as programme inductions as well as the programme regulations are provided online via a short 4 minute video and these the students can view wherever they are as long as there is internet access. A complete eLearning portal represents the total integration of multimedia, instructor-led, and real-time training – a human, collaborative environment, (Veeramani M, 2010). The CDEP students meet with their tutors and programme coordinators on the portal for content discussions and to share experiences of the content as well as for any posted queries that might need some feedback. Information is presented rapidly and efficiently wherever and whenever needed and accommodates the rate and level of difficulty of the students’ needs.

It is argued that online learning puts newly gained knowledge to work within companies while students are still pursuing their studies. ICT-based models thrive. In higher education and adult training, there is some evidence that educational opportunities are being opened to individuals and groups who are constrained from attending traditional universities, (ICT in Education:2010). It allows students to study where they are most comfortable and when they are most productive. Similarly, the students for this programme are believed to study at their own comfortable workstations without any travel disruptions to attend tutorial sessions at the offering institutions. As Distance education (DE) practitioners they learn, and at the same time, apply the knowledge learnt in their work situations which assists them in solving some issues which they may previously not have had the skills for. Interactive technology offers threaded discussions and real-time chat to enhance learning. Through discussion forums the students interact with one another and their learning is enhanced.

Issues of Access in the Programme
Evidently, “one of the key concepts in the right to education is access: access to the means to fully develop as human beings as well as access to the means to gain skills, knowledge and credentials” (Geith & Vignare, 2008). Woodrow (2003), Andreshak-Berham (2003) and Johansson et al. (2005) note that ‘access’ was understood in the last quarter of the 20th century to address ‘inclusion of the under-represented in higher education’ particularly mature students. Consequently the meaning was limited to high enrolment numbers but did not consider student profiles and socio-economic backgrounds. Critical considerations of retention, employability and progress within the chosen field of work were ignored. Johansson et al (2005) note that generally, participation in higher education seems to be regarded as sufficient if there is increase in enrolment numbers.
Although the CDEP programme is for Distance Education practitioners, the College has opened its access even to new secondary school-leavers and other people with the necessary qualifications who may be aspirants of distance education. This is to enable these people to have knowledge about ODL and where possible, to join ODL providing institutions already grounded on ODL issues. The program is open to all, both males and females and does not discriminate against anyone because of his/her physical status (though at the moment there have not been any disabled people who might have shown interest or applied for the programme). Evidently, widening participation and access as defined are elusive in terms of the requirements that determine eligibility to participate. Based on this critique, Woodrow (2003) advocates the usage of ‘social inclusion/exclusion’ in explaining the concept of access because it is more applicable to divergent and changing circumstances. As is pointed out in the SADC ODL project report “Gender mainstreaming in ODL will be an integral part of the training activities in order to ensure that the programme of the Centres of Specialisation addresses specific issues and concerns of both men and women”. Hence the CDEP programme at BOCODOL has both female and male students.

The SADC students were from the following countries as illustrated in table 2

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>NUMBER OF STUDENTS</th>
<th># STUDENTS COMPLETED 1ST 12 MONTHS</th>
<th># STUDENTS COMPLETED 24 – 36 MONTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tanzania</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Mozambique</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Malawi</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DRC</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lesotho</td>
<td>2</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Angola</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Botswana</td>
<td>24</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>

The two from Angola never really started the programme, probably due to communication problems. The other two from Malawi went as far as module 2 and the one French student from the DRC also went up to module 2. The Tanzanian student who did not complete due to pressure at work, went as far as module 6 and was left with just the final finance module 7 and portfolio assignment to complete.

**Student Progression**

A learning progression is a road or pathway that students travel along as they progress toward mastery of the skills needed for career and college readiness. Learning progressions provide teachers with the opportunity to determine whether students have navigated successfully through the milestones and are able to move forward along the road to career and college readiness. (www.pdesasa.org?ContentWeb) The CDEP programme at BOCODOL is a programme meant to equip distance education practitioners with basic skills in distance education. These are the skills that the practitioners thereafter can utilise in their distance education institutions to better their performance. It’s also open to those people who might want to change their career and join the distance education pathways, already equipped with basic skills in Distance Education. Hence student progression needs to be analysed so as to find out how much the learners have gained from these skills.

The CDEP programme is in its 5th cycle this academic year 2015/16. The following table shows the number of students enrolled in different cohorts and how they have progressed.
The following are the numbers of students who graduated in each of the past four years:

Table 2 – Student completion by cohorts

<table>
<thead>
<tr>
<th>ACADEMIC YEAR</th>
<th>NUMBER OF STUDENTS ADMITTED</th>
<th>NUMBER OF STUDENTS COMPLETED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012/13</td>
<td>35 admitted a (all registered)</td>
<td>7</td>
</tr>
<tr>
<td>2013/14</td>
<td>23 admitted (21 registered)</td>
<td>12</td>
</tr>
<tr>
<td>2014/15</td>
<td>22 admitted (11 registered)</td>
<td>10</td>
</tr>
<tr>
<td>2015/16</td>
<td>18 admitted (11 registered)</td>
<td>12</td>
</tr>
<tr>
<td>2016/17</td>
<td>34 admitted (about 32 registered)</td>
<td>Still on the programme</td>
</tr>
<tr>
<td>Total</td>
<td>98 (excluding the 2016/17)</td>
<td>41 completed</td>
</tr>
</tbody>
</table>

Summary of Progression:

The total completion rate excluding the 2016/17 cohort is 41%. Of the remaining 57 students who have not completed, there were 14 withdrawals from the first cohort and one passed away. These withdrawals are as a result of some students having gone beyond the 36 month maximum period open for running the programme (2012/13 – 2014/15 academic years). Thus, making a 38.8% withdrawal or non-completion rate from the first cohort. However, in 2015/16, 4 of the 11 registered students have completed and will be graduating at the end of this year, thus making a 30% completion rate.

Some of the reasons for this low progression rate, as per the evaluation analysis, can be attributed to student experiences of learning via an online mode of delivery.

The Effectiveness of the Programme

An online programme is believed to be effective if it has an environment supported by a teacher in which high, clear expectations and positive relationships are fostered; active learning is promoted (Kentucky Department of Education:2015). The teacher’s primary task is to facilitate learning. Sean Bulger (et.al. 2002) argue that effective teaching and learning looks at Four Aces: outcomes, clarity, engagement and enthusiasm and that these four aces systematically implemented can enhance student learning and can be used as a vehicle for continual self-examination to improve the instructional effectiveness (Bulger S.M, Mohr Derek and Walls Richard: 2015). The CDEP deposited on the eLearning portal have outcomes stated in each unit of the modules. These outcomes tell the student what is expected of him/her after going through each module. It is hoped that this content is clear enough to engage the students and is engaging with in-text activities and reflective exercises.

Data Analysis

A short interview in the form of a questionnaire was administered to the students, to get their views on what they experienced during their learning and how they felt about the effectiveness of online learning.

The rating scale in the questionnaire comprised 10 items, which are summarised as Lessons from experiences: The questionnaire was as follows:

KEY:
SA = Strongly Agree  A = Agree  NS = Not Sure  D = Disagree  TD = Totally Disagree
ITEM | SA | A | NS | D | TD
--- | --- | --- | --- | --- | ---
16. CDEP is a good course for all DE practitioners |  |  |  |  |  
17. All the 7 modules are relevant to the DE practitioner |  |  |  |  |  
18. The MOODLE LMS is a good area to use for teaching this program |  |  |  |  |  
19. I never experienced problems in accessing this LMS |  |  |  |  |  
20. I have learnt a lot from online learning |  |  |  |  |  
21. I think I can share my experience of learning online with my institution |  |  |  |  |  
22. Online learning is less costly than print materials and face-to-face tutorials |  |  |  |  |  
23. My class mates participated a lot on the discussion forum |  |  |  |  |  
24. Very few students were active on the discussion forum |  |  |  |  |  
25. From my tutors and a few comments from other students I was motivated to study online |  |  |  |  |  

From the evaluation questionnaire administered the responses were as follows:

**Evaluation of eLearning Based CDEP Program**

**Section A: Demographic Details**

A purposeful sample of ten students responded to the questionnaire. The respondents’ age ranged between 32 and 51 years with a mean age of 36.2 years. The majority of the respondents were female accounting for 70% (n=7) of the respondents. The certificate holders accounted for 30 %, the diploma for 20% while the remaining 50% were basic degree and Masters Holders.
Section B: Perceptions about CDEP (5 point Likert scale responses)

This section requested respondents to rate their overall experience on 10 items which covered level of satisfaction with regard to CDEP, accessibility and benefits of learning management system/ eLearning; efficient utilisation by students; and faculty support. The 5-point Likert scale was in order of strongly agree, agree, not sure, disagree and totally disagree. On data analysis, the responses were grouped into three main categories as follows: Agree category, which included strongly agree and agree responses; neutral (not sure) responses and the disagree category which covered the strongly disagree and disagree responses. The neutral responses were discussed separately as they could reflect indecisiveness of the students, which might result from factors such as inability to recall information or being uncomfortable about disclosing information.

a. Satisfaction with CDEP

There were two questions which explored whether CDEP was good for DE practitioners and the relevance of the seven modules to DE practitioners. The response to these 2 questions revealed that all 10 participants appreciated CDEP.

The second question explored whether students appreciated learning online. Nine out ten (90%) indicated that they learnt a lot with online use, while one student did not respond to this question.

b. Accessibility and benefits of learning management system/ eLearning

This category consisted of four questions. Responses to the question on whether LMS was good to teach the CDEP course, revealed that most students (80%) appreciated the use of LMS; while one (10%) disagreed with the statement and 1 (10%) was neutral.

The second question examined the students’ experiences in accessing the LMs. The majority (80%) indicated that they never experienced challenges with LMS.

The Third question was on the cost effectiveness of eLearning versus face-to-face. Respondents revealed that online learning was less costly than face-to-face.

Another question investigated whether students would recommend the same course to other students. The response to this question revealed that 80% would recommend the course, while 10% disagreed with the statement and 10% was neutral about the statement.

c. Efficient utilisation by students

This category was evaluated by three questions. The first question was on whether there were active interactions by students, the majority (40%) were happy with the students’ interactions on discussion forums. This question was followed by a similar question, which explored whether very few students participated actively in the discussion forum, and the results revealed that majority (90%) agreed with the statement that there were very few interactions in the discussion forum.

There was another question that explored whether students would share their course with other colleagues at work and the results revealed that the majority (90%) supported the statement that they would share the course with colleagues.

d. Faculty support and motivation to learn

The two questions were on faculty support. The first question explored whether the students and faculty interactions contributed towards improved motivation to learn. The results revealed that the approach was effective in motivating students (90%) to learn.

The last question explored whether there was good faculty support (100%) and all appreciated the support they had received from the faculty, program coordinator and tutors.

In addition to the questions on the Likert scale there were 3 open ended questions where students had to air their view on the effectiveness of the programme and how they think the running of the programme could be improved.
Section C
This component was evaluated by 5 subjective questions. First question explored why the students enrolled in the program. The themes that emerged were that students enrolled to improve their qualifications; to improve their qualifications in a distance learning program; to gain more knowledge on how to work with distance learners and for personal and professional development.

Another question explored whether participants felt that their learning objectives had been achieved and most indicated that their goals were met because they had gained the skills they wanted; because they were then able to offer distance learning programs effectively.

The fourth question explored the challenges they had encountered with eLearning (LMS) and the following common themes were identified: problems with internet connectivity which interfered with students’ discussion forums: lack of internet in the office; slow or no feedback from tutors; having multiple roles; marking that took too long.

The last question was on what needed to be improved in the program and the following responses were received: Reduce penalties for failure to participate on line; Upload video clips on LMS; Institution should recognize some of the faculty’s contribution and commitment to the program and also to improve on internet speed.

Conclusion and Discussions
CDEP was greatly appreciated by most of the participants; however, the greatest concern was students’ limited involvement in forum discussions, which could result in reduced student motivation to participate in online learning and hence reduced quality of education.

In eLearning the most important thing is to ensure that there is a high level of interactivity and participation to keep the students engaged at all times and to enhance learning. Terry Anderson’s (2003) parsimonious equivalency theory of educational interaction mentions that at the start of each module the coordinator would usually make the students aware of the platform by posting information on the announcement section so that the students are kept abreast with the discussions and learning. Then when the module starts the tutor would enter the platform and post a welcoming remark and prompt some discussions from students by posting some work on questions for discussion. As they synchronously come up, the students would respond to the posting. In such interactions knowledge is exchanged between the students. But as mentioned earlier and as evidenced by the evaluation exercise, only a few students in the CDEP programme participated during the discussion forums.

The other concern that was observed from the open ended questions was the slow internet connectivity and
the faculty taking too long to give feedback on the students’ performance. It is therefore recommended that in order to improve the effectiveness of online based CDEP programme, the institution should work on improving internet connectivity so that students are connected all the time. The faculty under which the programme falls (and all other online programmes in general) should improve on timely feedback and encourage students to engage in forum discussions and make eLearning interesting for students.

According to the programme regulations, the student interaction on the platform is awarded 5%, which contributes towards their final pass mark. That is, this programme is assessed by assignments only, which are supposed to account for 95% of the overall marks and student participation or interaction on discussion forums is 5%. This interaction was at times interrupted by power failures and those students who were active participants then found it hard to interact. This really affected students from across the regions. One of the emails sent reads as follows;

“On the whole, online learning has been proved by the users to be effective and as something they can sell to others, despite the problem of internet accessibility to all (which is the discriminating factor in IT). What is important is the support services so as to get students to participate on the discussion forums and learn from one another as well as from the facilitators. The content should be relevant to the users and more guidance on the use of the depositories from the portal is also necessary. Some learners are slow to act and if they find the internet to be problematic and are not getting all the required support, this might discourage them and they may fail to progress. The lack of proper support might have led to some students failing to progress and failing further down the line, and this needs thorough investigations.”

References


5. Geith, Christine & Vignare, Karen, 2008; Access to Education with Online Learning and Open Educational Resources: Can they close the gap. ERIC www.eric.ed.gov/?id=EJ837472


LEARNERS’ ACCEPTANCE OF MOODLE AT THE UNIVERSITY OF NAMIBIA: THE CASE OF DEPARTMENT OF INFORMATION AND COMMUNICATION STUDIES

Martha Mosha  
(University of Namibia  
mmosha@unam.na)

Key words: eLearning, Moodle, acceptance, learning management systems, University of Namibia

Abstract - The University of Namibia launched Moodle as a Learning Management System (LMS) to be adopted by the Institution in 2015. The Department of Information and Communications Studies at the University moved on to run two practical courses with the aid of Moodle using its basic functions. The students who enrolled for the course had to adapt to the System. This paper explores the level of acceptance of Moodle by the students with findings that show that overall the students were satisfied with using Moodle as part of eLearning.

Introduction

The then Centre for eLearning and Interactive Multimedia, now known as the Centre for Open, Distance and eLearning (CODEL) launched Moodle as a Learning Management System (LMS) to be used by the University of Namibia (UNAM) community as part of its e-Learning system. According to Šumak, Heričko, Pušnik, and Polančič (2011), “An eLearning system is a system that provides services that are necessary for handling all aspects of a course through a single, intuitive and consistent web interface.” It is argued that, “eLearning is one of the most popular trends of learning today” (García-Peñalvo, Conde, Alier, & Casany, 2011). As explained by Kumar, Gankotiya, and Dutta (2011), “It is usually accepted that there are two major knowledge-sharing systems, the traditional system and the information and communications technology (ICT) based system.” Moodle was thought to be the best of the ICT Systems after a number of other options were investigated by the Centre. It is noted that Moodle is also favoured in most cases due to “...the fact that it satisfies the guidelines for best LMS” (Thuseethan, Achchuthan, & Kuhanesan, 2014). In addition, “Moodle is designed based on social constructionist pedagogy, which is a learner-oriented philosophy” (Lin, Wang, Lin, & Yuan, 2009).

Thuseethan et al. (2014) explain that, “Usability evaluation is considered as one approach to assess the efficiency of eLearning systems. It is used to evaluate how well technology and tools are working for users.” Almarshdeh, Sahari, Zin, and Alsmadi (2010) add that, “The evaluation of learning management systems (LMS) is crucial to ensure their effective implementation...”

“Different learners may have different characteristics, prior knowledge, starting skills, motivation or needs” (Marengo, Pagano, & Barbone, 2012). Hence this research was done with this in mind. These learners then need to be, “…positively motivated and led to an active application of the adaptive features...” (Kareal & Klema, 2006) for the System to work effectively. In all, if a course on Moodle is well designed, it “…can enhance learner-content interaction by the use of hyperlinks, as well as learner-learner and learner-tutor interactions with the use of synchronous and asynchronous communication tools such as forums” (Pahinis, Stokes, Walsh, Tsitrou, & Cannavina, 2008).

It must be noted that there are some authors who have a different opinion on the use of LMSs such as Moodle and prefer the use of social networks to engage the students. Dalsgaard (2006), believes that an LMS should be used, “…to cover only administrative issues” and thus allow for social networking sites to do the rest.
Objectives
The objectives of the research included to:
• understand how the students were introduced to Moodle
• establish how they would have preferred to be introduced to the System;
• discover how the students coped with learning on Moodle;
• evaluate the students’ acceptance of Moodle.

The Use of Moodle within the Course as DICS
Moodle was used as a blended learning system to support the traditional teaching that took place within the classrooms. According to Kareal and Klema (2006), “Moodle is used both as the primary delivery vehicle for courses as well as a supplementary tool for face-to-face learning.” This then made the previously used system within UNAM referred to as the “Portal” (or MyPortal as known by the students) redundant. As such, the course instructor introduced Moodle to the students who were then to adapt to the system on their own. The Instructor was also there to offer support where possible, however difficult cases were referred to the UNAM Moodle administrator. The Moodle system was used for; course management, uploading of tutorial and other course content, communication in terms of announcements and chats, submission of most assignments and feedback with grades, while the calendar was used to mark the deadlines for assignments. An online forum was created but the students failed to use it due to limited access to computers within the University.

Methodology
A quantitative approach was used to get to the findings. The researcher conducted a survey with a sample of 85 students from the total number of 164 students who enrolled for the course and were introduced to Moodle within the Department. Questionnaires were used to capture the learners’ experience. The filled questionnaires were analysed with the aid of a Statistical Package for the Social Sciences.

The questionnaire featured questions in two groups; the demographics questions and general questions on the Moodle experience. A pre-test of the questionnaire was given to ten students and the feedback was used to improve what already existed to become the final version of the questionnaire used. The sampling was limited to the 164 students within the two courses. The courses were offered to both degree and diploma students within the DICS. These were all full time students who attended classes at the UNAM Main Campus. A total of 90 questionnaires were randomly given to the two groups on a given day when they attended classes back to back. From the given number of student present on the day, 85 questionnaires were returned completed while the other 5 were incomplete in one way or another giving a usable response rate of 52%.

Findings
Table 1 below is a summary of the respondents’ profiles. The majority were female with the age range of 18-25 years being the most prevalent. There were more student respondents within the degree course than the diploma and this was due to the fact that more students enrolled for the degree than the other. At 98.8%, almost all of the students, were first time users of the System and the same percentage was for the fact that they had only had the one course on Moodle. Among the respondents, only 9.5% had been exposed to any other LMS. Most of the students considered themselves to have an advanced experience with technology- this stands at 52.9%.
<table>
<thead>
<tr>
<th>Table 1</th>
<th>Profile of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FREQUENCY</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>20</td>
</tr>
<tr>
<td>Female</td>
<td>65</td>
</tr>
<tr>
<td>Age Range</td>
<td></td>
</tr>
<tr>
<td>18-25 years</td>
<td>66</td>
</tr>
<tr>
<td>26-39 years</td>
<td>16</td>
</tr>
<tr>
<td>40 and above</td>
<td>3</td>
</tr>
<tr>
<td>Programme of study</td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>35</td>
</tr>
<tr>
<td>Degree</td>
<td>50</td>
</tr>
<tr>
<td>First time experience on Moodle</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>84</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
</tr>
<tr>
<td>Student only has this course running on Moodle</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>84</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
</tr>
<tr>
<td>Student has been exposed to other LMS</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>8</td>
</tr>
<tr>
<td>No</td>
<td>76</td>
</tr>
<tr>
<td>Experience with technology</td>
<td></td>
</tr>
<tr>
<td>Advanced</td>
<td>45</td>
</tr>
<tr>
<td>Intermediate</td>
<td>35</td>
</tr>
<tr>
<td>Novice</td>
<td>4</td>
</tr>
<tr>
<td>Do not know</td>
<td>1</td>
</tr>
</tbody>
</table>

The students were introduced to Moodle within the course and were given a two hour training lecture on the System and how to navigate through the different tabs as well as an insight as to what was available to them. This also included how to submit their assignments. There was additional reading material and videos loaded within the course to enable the students to read more and learn how to work with Moodle. This was mainly for those who did not make it to the introductory class or those that might have forgotten what had been explained. The Instructor also made sure that with each submission (a total of 3 for each course within the semester), as part of the consultation hours for the assignment, a demonstration was given to remind the students of where to go to submit their assignments. Therefore in this case, most students learnt by themselves but when they got stuck, they were able to seek assistance from the course instructor.

Some students were excited about the availability of the Mobile App and hence downloaded and used it instead of waiting until they had access to the computer labs within the University. At 37.6%, this number is encouraging as it shows that these students were pro-active in the use of Moodle.
Over 74% of the respondents found the Moodle interface easy to use. This is encouraging considering that most of the respondents were experiencing Moodle for the first time.

Another large majority was the 94% agreeing to the fact that the Moodle language is user-friendly, thus giving the reassurance that the students could work out elements such as assignment submission on their own.

Each course within Moodle has its own layout depending on the instructor of the course. At 78.8%, the respondents responded positively to the courses having a good layout. The layout for the two courses was identical.
Figure 4. Moodle content has a good layout

These positive responses however take a dip from “strongly agree” to mainly “agree” when the respondents were asked about how welcoming the Moodle design was. At 80%, the positive majority is still a high figure. This is based on the initial set-up of the Moodle module for UNAM.

Figure 5. The Moodle interface design is welcoming

This pattern of response was repeated when the students were questioned about their overall understanding of the navigation tabs within Moodle. This time the overall figure of positive respondents stood at 70.2%.

Figure 6. Moodle navigation tabs are understandable

There are a number of key features within Moodle and for the given courses only the basic features were deployed. Of the available features, Table 2 below demonstrates the percentage of use by the respondents. The most commonly used feature was the one to submit assignments - this is because it was compulsory to sub
Table 2
Most Used Features

<table>
<thead>
<tr>
<th>MOODLE FEATURES USED</th>
<th>RESPONSES</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calendar</td>
<td>55</td>
<td>13.6%</td>
</tr>
<tr>
<td>Storage</td>
<td>35</td>
<td>8.6%</td>
</tr>
<tr>
<td>Message</td>
<td>64</td>
<td>15.8%</td>
</tr>
<tr>
<td>Grades</td>
<td>73</td>
<td>18.0%</td>
</tr>
<tr>
<td>Assignment Submission</td>
<td>81</td>
<td>20.0%</td>
</tr>
<tr>
<td>Access Class Presentations</td>
<td>55</td>
<td>13.6%</td>
</tr>
<tr>
<td>Access Other Course Content</td>
<td>42</td>
<td>10.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>405</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Most respondents agreed that it was easy to submit their assignments via Moodle, the figure stands at 81.5%. Further questioning revealed that it was considered easier to submit assignments on Moodle than the physical option which meant printing the assignment and submitting it to the lecturer in person. Here 77.6% of the respondents agreed to the fact with 54% strongly agreeing. This correlates with the responses for a question regarding the ease of use of Moodle. In the end, 88.8% of the respondents agreed that Moodle was easy for them to use. No one opted for “strongly disagree” in that instance.

![Easy Submission of Assignment](image)

Figure 7. Easy submission of assignments on Moodle

When questioned about the training that was conducted within the course on the use of Moodle (as explained before), 81.2% of the students agreed that this was adequate enough for them to be able to use the System. The point to note here is that none of the respondents opted for “strongly disagree.”
In order to further understand the acceptance of Moodle by its users, the respondents were asked about their overall experience with the System. A majority of the respondents, 89.4% agreed that they had had a positive experience. It is again worth noting that no one opted for “strongly disagree.”

Most of the students, 53.1%, used Personal Computers to access Moodle, mostly within the departmental computer lab. The table below shows how else the students accessed Moodle. The students also used their own personal devices to access Moodle with 46.9% of the respondents choosing that they used smart phones and/or tablets.
Table 3

Used Devices to Access Moodle

<table>
<thead>
<tr>
<th>DEVICES USED TO ACCESS MOODLE</th>
<th>RESPONSES</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Lab</td>
<td>65</td>
<td>33.7%</td>
</tr>
<tr>
<td>Personal Computer</td>
<td>68</td>
<td>35.2%</td>
</tr>
<tr>
<td>Smart Phone – Web</td>
<td>26</td>
<td>13.5%</td>
</tr>
<tr>
<td>Smart Phone – App</td>
<td>21</td>
<td>10.9%</td>
</tr>
<tr>
<td>Tablet – Web</td>
<td>6</td>
<td>3.1%</td>
</tr>
<tr>
<td>Tablet – App</td>
<td>7</td>
<td>3.6%</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

As per Table 4 below, 24.3% of the students, would prefer to be taught how to use the system within the course for which they are enrolled. The same percentage also wishes to be trained on the use of Moodle on a face-to-face basis. The next best option is to include it as part of the first year introduction to ICT course, here at 17.4%.

Table 4

Opted Training Methods for the Future

<table>
<thead>
<tr>
<th>FUTURE TRAINING METHODS</th>
<th>RESPONSES</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part of Course Run on Moodle</td>
<td>35</td>
<td>24.3%</td>
</tr>
<tr>
<td>Computer Centre Course</td>
<td>9</td>
<td>6.3%</td>
</tr>
<tr>
<td>Part of Intro to ICT</td>
<td>25</td>
<td>17.4%</td>
</tr>
<tr>
<td>Class Demonstrations</td>
<td>18</td>
<td>12.5%</td>
</tr>
<tr>
<td>Printed Material</td>
<td>2</td>
<td>1.4%</td>
</tr>
<tr>
<td>Video Tutorials</td>
<td>13</td>
<td>9.0%</td>
</tr>
<tr>
<td>Online Tutorials</td>
<td>7</td>
<td>4.9%</td>
</tr>
<tr>
<td>One-on-One Training</td>
<td>35</td>
<td>24.3%</td>
</tr>
<tr>
<td>Total</td>
<td>144</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

In the end, most students were satisfied with the use of Moodle with the combined responses for “satisfied” and “completely satisfied” being 84.7%.
Conclusions

The research findings lead to an interesting discovery of how the students were able to adapt to Moodle as a part of their blended learning. Although initially confused by the System, they managed to find some familiarity with the simple way in which it was set up to enable intuitive use.

It is thus thought that the students within UNAM are ready and eager to accept Moodle as a LMS and it is only the instructors who are delaying the process.

This study however had a number of limitations. The first being that the sample was taken from one group of students who were already studying a technical/practical course, therefore it is assumed that they already have some technical skills. The sample students were also only those using Moodle and these happen to be the undergraduate students registered within the Department.

Future work could be done to compare these students with others from different departments and faculties within the University. It would also be seen necessary to include a similar study of the postgraduate students. More importantly, future work would involve the testing of the Technology Acceptance Model – TAM to find if it is applicable in the UNAM context in terms of the students’ acceptance of Moodle. Another area of study would be to look into the preference of the UNAM students in using social networking sites in place of Moodle.
References


MOBILE LEARNING PEDAGOGY IN SUPPORTING ODL STUDENTS AT THE INTERNATIONAL UNIVERSITY OF MANAGEMENT (IUM)

Josephina Mwadhinandye Naboth
International University of Management (IUM)
jmnaboth@gmail.com or kashanu82@yahoo.co.uk

Abstract
This study presented the results of an exploratory study carried out to learn about the effects of mobile pedagogy in supporting open and distance learning at IUM. The study investigated the effectiveness of mobile pedagogy within the higher education sector at IUM. A survey research design was used and 30 questionnaires were distributed to students in 7 of 14 regions in Namibia. Data was analysed using the descriptive statistics part of the Statistical Package for Social Scientists version 19.0. Findings obtained from this study showed that there is a general consensus among students that mobile pedagogy is very effective and makes distance learning easier.

1. Introduction
During the last few years, the telecommunications field has experienced an exponential growth in network coverage, speed and technological innovation in Africa and the rest of the world. The variety of new products such as smartphones and tablets has allowed students at a distance to choose how they interact with course content and with their classmates. Until recently, students were only able to access their online course resources through their computers or laptops. Being tied to a desktop or laptop computer restricted their ability to learn and share knowledge while on the go, or in areas without connectivity.

Instructional designers and faculties involved in Distance Education are constantly seeking new ways in which to engage online learners, and the implementation of mobile learning tools in their online courses may enable students to access course information on handheld devices from anywhere, anytime. This research study, seeks to explore the importance of mobile learning (mlearning) pedagogy in supporting Open and Distance Learning (ODL) students within the context of the International University of Management (IUM) in Namibia. The objectives of this study were to explore the attitudes and perceptions of students on the effectiveness of mobile learning, to determine the preferences students have on mlearning and the extent to which mlearning is used by ODL.

2. Background of Study
Open and Distance Learning (ODL) refers to more flexible approaches to providing education and training, involving a combination of conventional face-to-face contact and independent study methods, using a variety of media and technology. It must be noted that in the last few years, the telecommunications field has experienced an exponential growth in network coverage, speed, and technological innovation. Thus, it becomes imperative for this study to make an assessment of the perceptions students have on mlearning given the growth of telecommunications and its subsequent impact on learning, especially in an ODL context. It is also critical for this study to explore the sustainability of mlearning and the provision of education using the ODL mode.

IUM launched its Distance and Open Learning programme in 2007. The university started the programme with ±100 students who were studying various programmes. The launch of ODL by IUM made many opportunities available to students who were previously not able to access post-secondary education in Namibia. The ODL
programme caters for certificates, diplomas as well as bachelors and honours degrees. To date, the university has more than 950 students who are part of the ODL programme. While there has been a significant growth in terms of the numbers of students attending ODL programmes, the university has a total of 8 500 full and part-time students spread across 6 campuses in Namibia.

The word mlearning “m” standing for “mobile”, represents the backstage mobile delivery technology that students globally are using in interacting with course content. It is obvious that for the expansion of the idea of learning and the creation of learning schemes that are based on the effective use of motivation that arises when a student is faced with the stimuli, mobile devices with internet access can offer significant advantages. Mobile technology actually offers the appropriate educational environment to assist learning activities both inside and outside the classroom (Fleischman, 2001). In contrast to the limitations of working and learning only in the classroom or in the laboratory, mobile technology offers access to learning material regardless of location and time. In this framework mobile learning is translated into flexibility in accessing learning materials and also contacting classmates and teachers anytime, anywhere. Mobile learning is the ability to enjoy an educational moment from a cell phone or a personal digital assistant (Harris, 2001). Thus, it becomes critical for this paper to assess the state of mobile learning within the context of IUM in particular and Namibia in general.

Attewell (2005), notes that, there are several advantages inherent in mobile learning such as independent and collaborative learning experiences, helping learners to identify where they need assistance and support, helping to overcome the digital divide and helping to raise self-esteem and self-confidence. It was therefore imperative for this study to explore the advantages of mlearning within the context of Namibia.

The success of using cell phones in education depends on the lecturers’ attitudes and how they integrate the use of such devices into the learning process. It is only when the teachers understand the pedagogy that supports its use; and they are empowered with the necessary skills; that they will utilise the affordances of mobile technologies to engage and support students in the learning processes (Attewell, 2005). It is therefore against this background that the researcher is eager to carry out this study and bridge the “digital divides” and “information age” paradigm. In addition, it is also important for this study to explore and assess how mlearning has been integrated in the wider curricula and pedagogy within the context of IUM.

3. Literature Review

Distance education is on the brink of another shift and technology is bringing in massive adjustments to the way students are accessing course content. Mobile learning education is on the go, thanks to mobile phones and Personal Digital Assistants (PDAs) which have expanded the boundaries of anytime and anywhere learning. The technological capacity of PDAs has increased tremendously in the past few years. Screens are getting bigger with more clarity; systems have more memory and more multimedia capabilities with more refined methods for inputting data. Clyde (2004), argues that the challenge “is to identify the forms of education and training for which mlearning is particularly appropriate, the potential students who most need it and the best strategies for delivering mobile education” (p. 46). It therefore becomes urgent for this current paper to contribute to the existing body of knowledge by identifying forms of learning that are relevant to Namibia and its universities.

Dong and Agogino (2004) conclude that mlearning is a powerful and useful tool when it links real-world situations to relevant information resources. They explore how downloading key information to a PDA would help to enrich the learning experience of students of a field trip. They also suggest the scenario of a learning experience with students on a field trip or at a museum being able to use their PDAs to provide relevant information. Two approaches were explored in the study by Dong and Agogino (2004) and were identified as: transforming and transcoding for delivering digital content intended for full-sized personal computers to mobile computing devices.

According to Makoe (2010), more than 98 percent of University of South Africa (UNISA) students already use a cell phone for social purposes. Even the low-end cell phones have some software features such as pictures, video, games, instant messaging that can be used for tutoring, assessment and collaboration amongst students and teachers. Some of these features can be harnessed to develop formal learning opportunities for distance
education students. Despite evidence that show that cell phones have occupied every facet of our lives, the pedagogical affordances of cell phones have not yet been fully explored in most developing countries. Cell phones are more accessible to most rural communities in terms of cost, geographic coverage and ease to use. “Interestingly in Africa, consumers might not have shoes, but they have cell phones”, remarked Brian Richardson, a founder of a mobile service company (Rao, 2011).

Studying through printed media is and still remains one of the main modes of instruction in most developing countries. The pre-produced, self-contained study materials are developed with an explicit understanding that they facilitate access to learning especially to those people who live in marginalised, remote communities. However, several studies have reported that cell phones can be used in conjunction with printed material to support interactive pacing; just-in time instruction; network databases; interactive prompting; self-check assessment; facilitating summative and formative assessment; problem solving and collaborative learning. The challenge is how distance education providers integrate these activities to enhance the learning experience for distance education students.

4. Problem Statement
Distance education has experienced dramatic growth both nationally and internationally since the early 1980’s. It has evolved from early correspondence education using primarily print-based materials into a worldwide movement using various technologies. The goals of distance education, as an alternative to traditional education, have been to offer degree granting programs, to battle illiteracy in developing countries, to provide training opportunities for economic growth, and to offer curriculum enrichment in non-traditional educational settings. A variety of technologies have been used as delivery systems to facilitate this learning at a distance. Distance education relies heavily on technologies for instructional delivery. Printed materials, radio broadcasts, television broadcasts, computer conferencing, electronic mail, interactive video, satellite telecommunication and multimedia computer technology are all used to promote student-teacher interaction and provide the necessary feedback to the learner at a distance. In fact, the explosion of information technologies has brought learners together by erasing the boundaries of time and place for both site-based and distance learners. Research in distance education reflects the rapid technological changes in this field although not much has been done within the Namibian context. Ozgur (2007), evaluated audio books as supported course materials in distance education. It takes an innovative role to meet the needs of higher education in Namibia by providing equal opportunity with the help of information and communication technology.

There has been a growing importance of mobile learning in academia but the literature that specifically addresses mobile learning in Namibia is relatively scarce. The lack of a systematic study to assess the effects of mobile learning on pedagogy of ODL students in Namibia has motivated this study.

5. Aims and Objectives
The main aim of this study was to investigate the pedagogic approach that best supports the effective use of cell phones in a distance education environment. In order to achieve the above-mentioned aim of this study, the researcher has explored and analysed the factors which are crucial in overcoming the possible hindrance of mlearning implementation in higher education and student perception of mlearning which may be influenced by specific variables. The study took into consideration variables such as gender, course of study and attitudes and perceptions towards these new technologies.

The three specific objectives of this study were to:

i. Examine students’ attitudes and their perceptions of the effectiveness of mobile learning.

ii. Determine the students’ preferences for mobile learning in distance education.

iii. Examine the extent of use of mobile learning by distance learners.
6. Research Design and Methodology
This study is based on the perceived importance of mobile learning pedagogy in supporting students in Namibia within the context of the International University of Management. The study followed both a descriptive and exploratory research design and IUM was used as a case study. Thirty (30) questionnaires were distributed to students across 7 regions in Namibia. All students surveyed were Namibian residents admitted through regular admissions for ODL programmes. The descriptive statistics portion of Statistical Package for Social Scientists was used to summarise the characteristics of the respondents and the constructs of the perceived importance of mlearning.

7. Discussion of Findings
7.1 Descriptive statistics
Data collected was analysed using the Statistical Package for Social Scientists (SPSS) version 19.0 and the descriptive statistics portion of SPSS was used to analyse the data. Of the 30 questionnaires distributed for this survey, only 22 were returned with usable responses which translated into a 73.3% response rate. Data which was obtained showed that 59.09 % of the respondents were male ODL students while 41.01% of the respondents were female. The age of the participants ranged from 18 to 40 years, though 45.5% of the respondents were between 31 and 40 years as shown in the Table 1 below. 55% of the respondents were first year students studying business related courses.

<table>
<thead>
<tr>
<th>AGE</th>
<th>FREQUENCY</th>
<th>PERCENT</th>
<th>VALID PERCENT</th>
<th>CUMULATIVE PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid 18 - 21 years</td>
<td>1</td>
<td>4.5</td>
<td>4.5</td>
<td>4.5</td>
</tr>
<tr>
<td>22 -25 years</td>
<td>8</td>
<td>36.4</td>
<td>36.4</td>
<td>40.9</td>
</tr>
<tr>
<td>26 -30 years</td>
<td>3</td>
<td>13.6</td>
<td>13.6</td>
<td>54.5</td>
</tr>
<tr>
<td>31 - 40 years</td>
<td>10</td>
<td>45.5</td>
<td>45.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
The study had more male participants than females largely due to the beliefs of families. The researcher assumes that women are generally discouraged from studying using ODL, due to family and work pressures. This is further exacerbated by the fact that gender roles in society are still skewed against females, hence their low participation in ODL learning programmes.

7.2 The mobile devices Used by ODL Students in Namibia

Results of this study showed that students in ODL programmes use a number of mobile devices for their studies. 72.7% of the respondents in this study showed that ODL students in Namibia use smartphones in mobile learning. In addition to this, 9.1% of the respondents also indicated that they use mobile devices such as iPads, phablets and tablets in conducting their learning programmes as shown in Figure 2 below. The findings obtained in this study showed that mobile devices are useful in pedagogy and as a result institutions of higher learning should invest in telecommunications in a bid to enhance pedagogy especially in ODL programmes.
It can be deduced that the majority of students in Namibia who are part of the ODL in Namibia have a positive perception in terms of mobile learning pedagogy within the context of IUM.

7.3 The Online Activities
This study found that ODL students are using mobile devices to access online activities such as checking course content, contact information and reading course content. Students were asked their opinion of the online activities they access using their mobile devices. 27.3% of the respondents noted that ODL students use mobile devices to access course calendars online as shown in Figure 3 below. In addition to this, it was found in this study that 4.54 percent of the respondents use mobile devices to read course content and asking questions about the assignment respectively. Those who used mobile devices for registration accounted for 22.73% while 9.09% of the respondents noted that they use mobile devices to access the library’s materials. However, there is still a concern in terms of accessing and making payments online and this was represented by a paltry 4.5% of the respondents.

![Figure 3 Online Activities ODL In which Students Engage](image)

7.4 Perceptions of ODL Students on the Effectiveness of Mobile Learning
Acceptance of technology among respondents was studied from 7 regions of Namibia. Respondents were asked about their perceptions of the effectiveness of mobile learning in pedagogy. Positive responses gathered from each component indicated the positive acceptance of mobile learning in pedagogy by ODL students. Detailed analysis of the data collected regarding the effectiveness of mobile learning in pedagogy is summarised in Figure 4. As indicated, 54.55% of the respondents argued that mobile learning technology in pedagogy is very effective while 36.36% of the respondents also argued that mobile learning is effective in pedagogy. A combined total of 90.91% of the respondents argued that mobile learning pedagogy is either very effective or effective while a paltry 9.10% of the respondents thought that mobile learning pedagogy is not effective.
Thus, it can be deduced that the respondents showed that mobile learning pedagogy in supporting ODL students in Namibia within the context of IUM is very important.

9. Challenges of Mobile Learning

The study also found some technical challenges that students face when it comes to mlearning in Namibia. The following challenges were identified by this study:

i. Connectivity and battery life
ii. Screen size and key size
iii. Meeting required bandwidth for nonstop/fast streaming
iv. Number of file/asset formats supported by a specific device
v. Content security or copyright issues from authoring group
vi. Multiple standards, multiple screen sizes, multiple operating systems
vii. Reworking existing eLearning materials for mobile platforms
viii. Limited memory
ix. Risk of sudden obsolescence
x.

It can be noted that the findings of this study are consistent with the findings of Maniar et al., (2008); Elias (2011) and Crescente and Lee (2011).

2. Conclusion

Mobile learning not only follows educational trends but also brings many more benefits, such as: the facilitation of education, a possibility of direct communication between teachers and students, catering for unique students requirements in a personal way and an opportunity to follow real-time conferences and webinars and to be able to interact with professionals right from their homes or classrooms. It also helps to overcome the problems of distance and expenditure and provides instant access to information. Understanding these current educational trends and benefits of mobile learning, Young Digital Planet (YDP) has prepared two brand new applications.
10. Recommendations

The advent of mobile phones presents a great opportunity and offers a timely challenge to redefine and transform educational paradigms. The researcher therefore makes the following recommendations:

i. Leverage existing investments
   Policy-makers should take stock of existing ICT investments and approaches, and devise strategies to complement rather than replace the current infrastructure.

ii. Localise policies
   Policy-makers should consider the local contexts of the country or region when creating new policies or adapting existing ones, as strategies that work for one country might not be appropriate in another.

iii. Support open technical standards
   Policy-makers should encourage the use of open, standards-based platforms for mobile learning applications, to increase access and streamline the development process.

iv. Promote intersectional cooperation and multi-stakeholder partnerships
   Policy-makers should promote cooperation between different branches of government and encourage partnerships between stakeholders from a variety of sectors and levels.

v. Establish policies at all levels
   Policy-makers should create or revise mobile learning policies at both national and local levels, regardless of whether education is decentralised or not. National policies should provide overarching structure and guidance, while local policies should direct implementation in individual districts or institutions.

vi. Review and update existing policies
   Policy-makers should revisit existing policies, particularly at the local level, that may be overly restrictive in regard to the use of mobile technology at schools and universities. National policies may need to be clarified or revised to give better guidance to districts and institutions.

vii. Ensure inclusive education
   Policy-makers should ensure that mobile learning policies promote gender equality and accessibility for learners with disabilities. This effort is essential for meeting EFA goals of providing quality education to all learners worldwide. ICT is a powerful vehicle for enhancing learning, and mobile devices form an essential part of that vehicle. If current ICT strategies for education begin to include mobile devices along with digital learning materials, support for teachers, and guidelines on best practices, mobile learning will soon become an important part of education.

11. References


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EFFECT OF MULTIMEDIA INSTRUCTIONAL MEDIA IN OPEN AND DISTANCE LEARNING

HYASINTA KESSY
hyasinta.kessy@out.ac.tz/ kessyhyasinta@yahoo.com
Department of Psychology and Special Education
The Open University of Tanzania
P O BOX 23409
TANZANIA

ABSTRACT
The study assessed the effectiveness of multimedia instructional materials on students’ performance. Between groups an experimental design was used where three treatment groups were given a variety of multimedia enriched instructional materials; 54 students were exposed to audio visual materials, 53 used printed multicolour, and 54 printed in plain black and white as a control group.

Pre- and post- tests were used to assess students’ knowledge of the given set of materials before and after the experimental treatments. Post test result scores and multimedia enrichment were used as dependent and independent variables respectively.

The audio visual group was found to perform significantly better (56.76%) than the printed plain (p= 0.001); the audio aided group performance was significantly higher (52.31%) than the printed plain (p= 0.05); the printed multicolour group performed higher (49.57%) than the printed plain group (45.54%).

The study recommends the use of multimedia technology in the preparation and use of ODL instructional materials. The study further recommends studies on teachers’ competence in developing, embedding and using multimedia enriched instructional materials. This article presents only the part of the major study

Keywords: Multimedia, Audio Visual, Printed Plain, Printed Multicolour

1.0 Introduction
The process of teaching and learning especially in Open and Distance Learning (ODL) system involves the use of different instructional materials to convey the necessary information between facilitators and learners. Instructional materials include any physical media through which instructions are communicated between learners and the respective facilitators while multimedia is used to describe a product that contains several types of media (Kessy, 2016). They include means of instructional delivery ranging from live instructors to textbooks, charts, magazines, newspapers, pictures, slides, transparencies, videos, electronic resources such as CD-ROMs, as well as online services (Dubey, 2014). Some of these instructional materials need to be transported to distant learners while others can simply be communicated through online systems.

Historically, there have been changes in the types of instructional materials used in the ODL system. ODL involves generations of people who have learnt by correspondence from printed instructional materials to interactive radio instructions, and open learning done by workbooks. Today we are working with a flexible learning model characterised by online and web-based technologies including multimedia instructional materials (Commonwealth of Learning, 2005). Many ODL institutions use hybrid combinations of delivery modes in distance education programs which include elements of
face-to-face instruction. These new technologies are providing completely new ways of thinking about the preparation of instructional materials as well as the delivery systems (Mitra, 2015).

There is a paradigm shift and rapid advancement in Information Communications Technology (ICT) from traditional institution-led learning to own-time self-learning at a distance as well as a shift from teaching to self-paced learning while slowly moving towards flexibilities and openness (Mitra, 2015). In an ODL system instructional materials take the place of teachers, consequently, the materials have to be carefully designed. Additionally, since the materials deliver the content, it is the role of the tutor to make sure that students learn effectively. Again, the learners we teach are heterogeneous in nature, they learn differently using different types of media, some prefer printed materials, others audio visual, others practise while others only need audio information like listening to a lecturing instructor (Kessy, 2016). From this point of view, several forms of media (multimedia) need to be designed in order to enhance learning. Multimedia makes use of several learning modalities because such information is presented through different senses including seeing, hearing, and touching (Hasebrook, 2005). The present study employed several types of instructional materials including printed plain and printed multicolour, audio as well as audio visual instructional materials.

1.1 Printed Plain Instructional Materials
These are paper-based instructional materials. They represent the traditional instructional materials used for conveying information in most education institutions. The font colour in these materials is black and principally the readability of the paper based material is low (Kessy, 2012). This type of media conveys information only through the eyes of the reader. Research shows that printed texts can only be improved to enhance learning by highlighting with different colours or adding textual cues such as underlining, italics, and boldface (Armbruster, 2010).

1.2 Audio Instructional Materials
Audio is an electrical or other representation of sound. These materials are primarily for listening and include the spoken word, audio cassette tapes, audio compact discs (CDs) and the machines on which they are played. These materials are frequently used in ODL to present music, stories, poetry readings, and speeches. Lectures can be recorded for use later.

1.3 Audio Visual Instructional Materials
These are the materials designed for both seeing and listening. They include motion pictures, television, and videotape. There is more integration of several forms of media hence the term “multimedia” (Mayer, 2008). Multimedia takes advantage of both the auditory (ears) and visual (eyes) channels in the working memory so as to deliver content most effectively (Paivio, 1986; Sternberg, 2003). A good example is video conferencing, which is an effective ODL mode of teaching where a single facilitator can teach several classrooms at the same time (Hovenga, 2011).

1.4 Printed Multicolour Instructional Materials
In the present study, these types of instructional materials resembled the printed plain materials in one way because they were also prepared on paper with black fonts. The difference between the two types of instructional materials was the presence of illustrations in the latter.

1.5 Statement of the Problem
Learners differ in their learning styles. While some students learn better by reading, others prefer looking at illustrations, some would like to practise and others rely on group discussions (Kessy, 2016). Studies show that such differences are caused by differences in brain dominance among people. For example a study by the National Institute of Neurological Disorders and Stroke (NINDS) reveals that left-brained students learn better when information is presented in a very logical sequence such as in numbered lists. They also prefer printed directions. Furthermore, students, who are right brained,
prefer visual concepts such as pictures, drawings, and manipulating objects. These students process information quickly as images (NINDS, 2007; Sperry, 1981; Rogers, 2013).

Hence, multimedia is the best technique because it caters for more than one sense simultaneously. Multimedia presentations provide different stimuli which include texts, the spoken word, sound and music, graphics, animations and still pictures (Aloraini, 2012). Indeed, multimedia is becoming indispensable in the ODL system. Additionally, multimedia allows teachers to display more information, helps them save time and energy, it allows for more attention to be paid to the course content, different drawings and pictures support the clarification of ideas and communication of information, and also, using different presentations like video clips along with maps or other kinds of presentations, they help to make the information closer to reality (Jaya & Rajesh, 2011). The addition of sound makes the idea clearer, attracts the attention of the learners, enhances attention, and promotes interaction between students and the content (Alfar, 2009).

Given the benefits obtained from multimedia instructional materials the study sought to find the best style for combining multimedia materials in order to enhance learning. The researcher considered it necessary to explore whether the process of comprehending the content of the subject which is printed in black and white instructional materials differs from comprehending ones enriched with multimedia enriched technology. In view of these concerns the present study assessed the differential effectiveness of combined multimedia on learning that involved printed plain, printed multicolour as well as audio visual instructional materials.

1.6 Study Objectives

The purpose of this study was to assess the differential effectiveness of multimedia instructional media on learning. The following objectives guided the study:
To determine learning effectiveness in printed plain instructional materials
To determine learning effectiveness in audio visual instructional materials
To compare the differences in effectiveness between printed plain, printed multicolour and audio visual instructional materials

2.0 Literature Review

This section provides an overview of the theoretical framework that illuminates the study and the related literature to the study.

2.1 The Cognitive Theory of Multimedia and Learning

The study was guided by the Cognitive Theory of Multimedia Learning (CTML) a theory that was created by Richard Mayer at Santa Barbra University. The central point of CTML is that humans learn better from words (spoken or written) and graphics (video or images) than words alone (Mayer, 2008). Mayer’s CTML incorporates three principles on how people learn including: limited capacity working memory, active processing, information transfer and dual-coding theory.

2.1.1 The Limited Capacity Assumption

This is a proposition that humans are limited in the amount of information that can be processed in the mental systems at one time. When an illustration or animation is presented, the learner is able to hold only a few images in the working memory at any one time. This concept of limited capacity gives a way to measure someone’s cognitive capacity through a memory span test. Literature shows that, in a digit span test, one can read a list of digits at the rate of one digit per second (e.g., 8-7-5-3-9-6-4). The longest list one can recite without making an error is his/her memory span for digits (Miller, 1956; Simon, 1980).
2.1.2 The Active Processing Assumption

Active learning occurs when a learner applies cognitive processes to incoming material. Thus, according to Mayer & Moreno (2003), for meaningful learning to occur, the learner must engage in five cognitive processes namely: selecting relevant words for processing in the verbal working memory; selecting relevant images for processing in the visual working memory; organising selected words into a verbal model; organising selected images into a pictorial model; and lastly, integrating the verbal and pictorial representations with each other and with prior knowledge.

2.1.3 The Dual Coding Assumption

The dual processing cognitive theory (DCT) suggests that verbal and visual stimuli are processed separately but simultaneously in the working memory. This assumption proposes that, there are two mental systems in cognition, verbal and non-verbal (Paivio, 1971). For example, one can think of a house by thinking of the word “house”, or form a mental image of a house. The verbal and image systems are connected and related, for one can think of the mental image of the house and then describe it in words. This is further illustrated in Figure 1.

![Cognitive Theory of Multimedia Learning (Dual Channel Assumption)](image)

Sensory memory allows us to sense sounds and images. Working memory is where we process information sensed by the sensory memory. As shown in Figure 1 words and pictures are processed separately (dual channel theory) but in the end, they and prior knowledge mix in the working memory. Moreover, the long term memory stores knowledge (Sweller, 2005). If too much is put in the sensory memory, the working memory cannot process, this explains limited capacity assumption. Overloading the sensory memory does not result in more learning (Mayer, 2008).

2.2 Audio Visual Instructional Materials and Learning in ODL

Learners in an (ODL) environment typically face several challenges during their studies. Most of the time, learners are physically separated from the instructor. In addition, most of the learners tend to be older, with several years of work experience; they hold full-time jobs, have families to look after and are often found to be struggling with time as they try to cope with their studies and various other commitments (Zoraini et al, 2007)
Many studies have been done on learning in multimedia context. For example, Zoraini et al, (2007) performed a study that aimed to assess the effectiveness of a simulated laboratory experiment, screen interface design as well as the technical aspects of multimedia courseware. The courseware was developed to complement the printed modules and was distributed to learners enrolled in the Bachelor of Education program at the Open University of Malaysia. The findings from the survey suggest that, the interactive multimedia courseware was effective and useful learning material and complemented the printed modules provided to the learners (Zoraini et al, 2007).

Again, Jyotsna, Suresh, and Santosh (2013) conducted a study on the Pedagogic Effectiveness of Print, Interactive Multimedia, and Online Resources. The study aimed at assessing the pedagogic effectiveness of the three modes of learning including: a self-instructional unit print, face-to-face tutorial support, interactive multimedia CD-ROM, and interactive multimedia on the web with online support. The results from this study revealed that, instructional content provided through interactive multimedia CD-ROM for self-learning was more effective and resulted in higher academic achievement than the printed module (Jyotsna, Suresh, & Santosh, 2013).

Additionally, Adam (2012) studied The Impact of Multimedia and Redundancy Theories on the Efficiency of History Presentations. The Multimedia Principle assumes that, people learn better from words and pictures than from words alone, while the Redundancy Principle believes that people learn better from graphics and narration than from graphics only, narration only, and text only. Quasi experimental post-test control group design was used to determine if more learning occurs during a presentation that incorporates multimedia, a two-tailed independent sample t-test was used for data analysis. Results indicated that, when compared to a control group, the inclusion of the multimedia showed a statistically significant improvement (Adam, 2012).

Petitt (1994) compared learning information that was presented in a traditional classroom lecture, where little text is written on the board, to learning the same information presented via computerised multimedia instruction. The information learned included biology, chemistry, foreign languages, and electronic equipment operation. The control group learned the information via traditional classroom lectures, while the comparison groups learned the information via computer-based multimedia. The researcher measured learning using achievement tests. It was found that learning was higher when the information was presented via computer-based multimedia systems than traditional classroom lectures (Petitt, 1994).

Consequently, multimedia presentations empower teachers to structure lessons that reach students of all abilities, a situation not met in the traditional classroom. Multimedia empowers students to take an active role in their own learning. Hence, teachers must recognise these implications and adapt their instruction to meet the individual needs of all learners.

3.0 Research Methodology

The experimental study was conducted at Benjamin William Mkapa secondary school, Ilala Municipality, Dar es Salaam region Tanzania. The researcher manipulated the levels of independent variables (multimedia levels of enrichment) and then measured the outcome (participant's performance in each treatment). Firstly, a pre-test evaluation was conducted on two experimental groups and a control so as to assess the prior knowledge of the learners on the topic selected. Secondly, the participants were provided with information on HIV, AIDS and STDs using three different instructional materials including audio-visual and printed multicolour (treatment conditions) and printed plain (control group). The two treatment conditions were the independent variables while the dependent variable were post-test scores obtained from students’ performance which was provided after each presentation. The study measured the knowledge the learners could exhibit on completion of each instruction. The study used purposeful, stratified and random sampling. Firstly, the experimental school was selected on purpose;
only the school with enough facilities for the experiment and a conducive environment was deemed fit for the experimental study. Secondly, only Form III (Grade 10) students were specifically selected because the topic on HIV, AIDS, and STDs was new to them. Thirdly, stratified sampling was done where two groups, girls and boys were used to randomly obtain the experimental groups. Each student was randomly allocated to the three groups as indicated in Table 1.

Table 1: Experimental and Control Groups

<table>
<thead>
<tr>
<th>GROUP #</th>
<th>TOTAL PARTICIPANTS</th>
<th>TREATMENT GROUPS</th>
<th>INSTRUCTIONAL MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>54</td>
<td>Audio Visual</td>
<td>Viewed and listened to a verbal narration from a DVD, enriched with illustrations</td>
</tr>
<tr>
<td>2</td>
<td>53</td>
<td>Printed Multicolour</td>
<td>Read printed multicoloured text</td>
</tr>
<tr>
<td>3</td>
<td>54</td>
<td>Printed Plain</td>
<td>Read printed plain text as a Control</td>
</tr>
<tr>
<td>TOTAL</td>
<td>161</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 reveals the treatment groups and the control group of respondents. All respondents were given a 40 minutes pre-test on HIV, AIDS and STDs; thereafter, they studied the same topic using the respective instructional materials for 40 minutes. Later on, a 40 minute post-test was provided to measure the knowledge gained. Multiple choice and matching item questions were used in both pre- and post-tests.

4.0 Data Analysis and Presentation

The purpose of this study was to assess how plain printed and multimedia enriched instructional materials differ in their effectiveness in the provision of education. It was assumed that the effectiveness of any instructional material depends on the content quality, structural variations, and textual enrichment of the materials used in the teaching and learning process. The effectiveness of audio visual and printed multicolour instructional materials was compared to printed plain as a control. The participants in each groups is indicated in Table 2

Table 2: Participants in the Different Modes of Instruction (N= number of students)

| MODE OF INSTRUCTIONAL MATERIALS | PARTICIPANTS | | | | |
|---------------------------------|--------------|--------------|--------------|
|                                 | MALE | FEMALE | TOTAL | N | % | N | % | N | % |
| Audio Visual(DVD)               | 31   | 23     | 54    | 30.3 | 100 |
| Printed Multicolour             | 29   | 24     | 53    | 31.6 | 100 |
| Printed Plain                   | 25   | 29     | 54    | 38.1 | 100 |
| **Total**                       | 85   | 76     | 161   | 30.3 | 100 |
4.1 Pre and Post-Tests Results in Different Modes of Instruction

Of the 161 students involved in the study, 54 were taught using audio visual only, 53 used printed multicolour materials and 54 printed plain instructional materials. Table 3 shows the differences between pre-test and post-test scores.

Table 3: Within Group Mean Differences in Pre-test and Post Test Scores

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>TREATMENTS</th>
<th>N</th>
<th>MEAN SCORES %</th>
<th>MEAN SCORE DIFFERENCES</th>
<th>STD. DEVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>Audio Visual</td>
<td>54</td>
<td>41.78</td>
<td>14.98</td>
<td>15.54</td>
</tr>
<tr>
<td></td>
<td>Pre-test</td>
<td></td>
<td>56.76</td>
<td></td>
<td>16.11</td>
</tr>
<tr>
<td></td>
<td>Audio Visual</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 2</td>
<td>Printed Multicolour</td>
<td>53</td>
<td>36.79</td>
<td>12.77</td>
<td>17.07</td>
</tr>
<tr>
<td></td>
<td>Pre-test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Printed Multicolour</td>
<td></td>
<td>49.57</td>
<td></td>
<td>17.24</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 3</td>
<td>Printed Plain</td>
<td>54</td>
<td>31.39</td>
<td>14.15</td>
<td>15.91</td>
</tr>
<tr>
<td></td>
<td>Pre-test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Printed Plain</td>
<td></td>
<td>45.54</td>
<td></td>
<td>17.58</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The best performing group was the audio visual treatment group while the worst performance was the printed plain treatment group. Thus the mean performance for students taught by audio visual was 56.76% (N=54, SD=16.112), followed by printed multicolour (M=49.57%, N=53, SD=17.583); and the lowest in performance was printed plain instructional material (M=45.54%, N=54, SD=17.583).

An independent t-test was conducted to evaluate the hypothesis that there would be a significant difference in effectiveness between printed plain and audio visual instructional materials (independent variables) on performance (dependent variable). The results of the t-test are displayed in Table 4.
Table 4: T-Test to Compare Performance of Printed Plain and Audio Visual Subjects

| PER- | T- | SIG. | N | MEAN | STD. | 95% CON-FIDENCE |
| FOR- | SCOR | (2-TAILED) | | SCORES | ERROR | INTERVAL OF |
| MANCE | T- | P-VALUE | | | DIFFER- | THE DIFFER-
| | | | | | ENCE | ENCE |
| | | | | | | LOWER |
| | | | | | | UP- |
| Printed | 3.458 | 0.001 | 54 | 45.54 | 17.583 | 4.788 | 17.656 |
| Plain | | | | | | | |
| Post-test | | | | | | | |
| Audio | 3.458 | 0.001 | 54 | 56.76 | 16.112 | 4.787 | 17.657 |
| Visual | | | | | | | |
| Post Test | | | | | | | |

These findings revealed that the mean score for audio visual instructional materials was significantly different statistically from that of printed plain instructional materials at 0.001 level \( t(106)=3.46, p=0.001 \). The 95% confidence interval for the difference in mean was quite wide, ranging from 4.79 to 17.66. The calculated eta squared \( (\eta^2) \) statistics of 0.10 indicates a small effect of size.

The enhanced effectiveness of the audio visual versus printed plain can be explained by Brain Lateralisation Theory which contends that “Individuals have different brain dominance which helps them to understand concepts, thinking, behaving, speaking, and functioning” (Sperry, 1981). The left side of the brain is specialised for language and the processing of information in a logical and sequential order while the right side is more visual and processes information intuitively, holistically, and randomly. The ODL system may have both left brained and right brained learners hence using multimedia instructional materials enhances the learning process.

Additionally, The Contiguity Principle of Multimedia Learning states that “The maximisation of learning is obtained by integrating words and graphics for instructional purposes” (Clark & Mayer, 2011). This can easily be achieved in a multimedia mode of instruction that includes both visual and audio information presented simultaneously. The contiguity principle further instructs teachers on the detailed practical use of multimedia. Teachers are advised to make sure that words and pictures in multimedia instructional materials are presented near or simultaneously rather than far from each other. Unfortunately, sometimes the situation is worse. There are neither pictures nor illustrations. Some topics in our programs may have a lot of terminologies that need illustrations but most of our instructional materials are prepared in printed plain. It is expected that the results and recommendations from this study will improve the situation.

Again, the hypothesis that there is a difference in effectiveness between printed plain and printed multicolour modes of instruction was analysed. The results from descriptive statistics (Table 1) indicate that the mean performance for printed multicolour media (M=56.76%, N=54, SD=17.24) with the highest and lowest scores equal to 85 and 20 percent respectively, was higher than that of printed plain media (M=45.54%, N=54, SD=17.58) which had 90 and 10 percent maximum and minimum scores respectively. The independent sample t-test was conducted to evaluate if there is a significant difference in effectiveness between printed plain and printed multicolour instructional materials (independent variables) on performance (dependent variable) as displayed in Table 5.
Table 5: T-Test to Compare Performance in the Plain Printed and Multicolour Printed Modes

<table>
<thead>
<tr>
<th>PERFORMANCE</th>
<th>T-SCORE</th>
<th>DF</th>
<th>SIG. (2-TAILED)</th>
<th>N</th>
<th>MEAN SCORES</th>
<th>SD</th>
<th>STD. ERROR DIFFERENCE</th>
<th>95% CONFIDENCE INTERVAL OF THE DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printed Plain Post-test</td>
<td>1.197</td>
<td>105</td>
<td>0.234</td>
<td>54</td>
<td>45.54</td>
<td>17.58</td>
<td>3.367</td>
<td>-2.647, 10.705</td>
</tr>
<tr>
<td>Printed Multicolour Post-test</td>
<td>1.197</td>
<td>105</td>
<td>0.234</td>
<td>53</td>
<td>49.57</td>
<td>17.236</td>
<td>3.366</td>
<td>-2.645, 10.703</td>
</tr>
</tbody>
</table>

The independent sample t-test shows that the mean score for printed multicolour media of instruction was not statistically different from that of printed plain media at 5% level: $t(105) = 1.20, p = 0.23$. The calculated eta squared = 0.01 was a small effect of size.

4.2 The Effect of Colour in Printed Instructional Materials

Printed multicolour instructional materials consisted of text displayed as hard copies but enriched with multi-coloured pictures. With these materials students were able to view the real pictures of the information presented in text form, and performed better. For example, Mayer and his colleagues found that students understood technical devices or natural phenomena better when they learnt from text combined with pictures than from plain text materials (Mayer, 1997, 2001; Mayer & Moreno, 2002). In other cases, however, it was revealed that adding pictures to a text can have a detrimental effect on learning as they may lead to cognitive overload or the pictures may become too decorative (Sweller, 2005). Thus, although instructional materials enriched with multimedia are of great benefit in learning and performance in particular, ODL teachers and curriculum designers need to know that too much information through the sense organs may lead to cognitive overload and confusion to learners.

5.0 Summary, Conclusions, and Recommendations

5.1 Summary

The study was guided by three objectives including: to determine learning effectiveness in plain printed instructional materials; to determine learning effectiveness in audio visual instructional materials; and to compare the differences in effectiveness between instructional materials which are printed plain, printed multicolour and audio visual.

It was established in this study that the mean performance for an audio visual mode of instructional material was higher than that of printed plain mode. An independent t-test revealed that the mean score for audio visual instructional material was significantly different from that of printed plain instructional materials at 0.001 level $t(106) = 3.46, p = 0.001$. With regard to the differences in effectiveness between instructional materials which are printed plain and printed multicolour, when an independent sample t test was conducted it was revealed that the mean performance for the printed multicolour media group was higher than that of the printed plain media group but the differences were not statistically significant different from that of the printed plain media at 5% level: $t(105) = 1.20, p = 0.23$. 

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5.2 Conclusions

The results from the experimental study revealed significant differences between printed plain, printed multicolour and audio visual instructional materials. Firstly, the audio visual group of participants scored higher than the printed plain group. The mean score for audio visual group was 56.76% while that of printed plain was 45.54%. Secondly, a comparison was made between printed plain and printed multicolour where it was revealed that the former had a lower mean performance of 45.54% compared to the latter which had an average score of 49.57%, but the difference was not statistically different. Generally, the performance from using multimedia enriched materials was higher than that of using the traditional printed plain materials.

5.3 Recommendations

The study results show that there was a difference in the effectiveness between multimedia enriched instructional materials and the plain printed ones. Learners learned content best in the audio visual mode followed by printed multicolour while the printed plain was the least effective. Such results are relevant to an ODL system.

Hence, the following recommendations were given:

i. Future research should be conducted on ODL teachers so as to assess their willingness and competence in the preparation and use of multimedia technology in the teaching and learning process. The study should also be extended to other stakeholders such as ministerial leaders and curriculum developers as well as teacher training colleges because of their contribution to the preparation of curriculum instructional materials as well as the training of teachers.

ii. The availability of infrastructure needed for the preparation of multimedia instructional materials such as computers is questionable, the ministry and learning institutions should consider this.

iii. A sustainability study should investigate the institutional conditions necessary to sustain integration of multimedia for educational purposes.

Reference


MOBILE LEARNING IN NAMIBIA – A CONCEPT FOR A MOBILE APPLICATION TO SUPPORT GERMAN LANGUAGE LEARNERS IN THE TOURISM SECTOR

Dagmar Oertel
University of Technology Dresden, Germany
Professorship "Didactics of Informatics"
dagmar.oertel2@tu-dresden.de

ABSTRACT

More and more people in Namibia possess mobile devices such as mobile phones, laptops or tablets and carry them in their bags almost all the time. Also, the mobile network is continuously expanding, so that it is possible to have internet access even in remote locations of the country. Thus, the positive aspects of mobile learning should be applied to all areas of education, whether in schools, colleges or in the training of employees. The tourism sector in particular is one of the most successful sectors in Namibia. However, employees who work in this field were educated through classroom training and by using analogue media. To cope with the task of lifelong learning, they should also be trained through digital and mobile learning units. Therefore, the aim of this paper is to present a concept for a mobile application for learning the German language. This application could assist employees in the tourism sector in communicating with their clients. Even after their graduation, users of this app can continue the process of learning vocabulary and key phrases for everyday use to be able to talk to German tourists. The proposed concept is to be evaluated in a qualitative survey with volunteers from the target group and could eventually be useful in training employees in the tourism industry.

Keywords: mobile learning, lifelong learning, learning languages, tourism in Namibia

1. Introduction

More and more people in Namibia possess mobile devices such as mobile phones or tablets. Nowadays the trend even goes as far as people owning a second mobile phone: A recent extract from the statistics of World Bank shows the basic national ICT data for Namibia in the period from 1990 to 2014. Table 1 demonstrates that Namibia has developed rapidly with regard to its use of ICT: Over 100% of the population have a mobile cellular subscription.

Nevertheless, Semali and Asino (2014) point out, that landline phones and internet access exist primarily in Namibian towns with large white populations. They continue saying, that people in rural landscapes did not have enough access to learning materials during the period of occupation. After all, mobile phones have spread so widely in Namibia now. Hence, mobile devices and mobile data need to be used more intensively for learning purposes. Also teachers need to explore new horizons: The positive effects of mobile learning should be used in all areas of education, whether in schools, colleges or in the training of employees.

Mobile learning supports the Namibian population on a daily base, even in informal learning scenarios: Semali and Asino (2014) underline the opportunities of mobile usage in Namibia by presenting their analysis of the readers’ SMS messages to the newspaper The Namibian. By implementing an SMS page in 2007, The Namibian gave its readers, especially people in rural landscapes, the opportunity to participate in political discussions. Readers sent SMS messages to the newspaper and additionally improved their literacy skills and
were empowered to take part in the critical discussions about actual events in the country. Here it is shown, that mobile communication can trigger learning effects even when the application is not created especially for learning purposes.

In the mobile reporting project “NBC Wowza - Youth Hour”, organised in 2015 by DW Akademie and the Namibian Broadcasting Corporation, young journalists were trained to use mobile reporting apps (e.g. iMovie (iMovie, 2016), Vodio (Vodio, 2016), filmicpro (filmicpro, 2016) and Simple Transfer (Simple, 2016)) to create small reporting movies about important topics for the Namibian youth. This multimedia project allows young people, especially from rural areas, to participate in media (Wowza, 2016).

In this paper the focus is on mobile applications for adults that were particularly designed for the purpose of learning German. In 2015, there were 8 358 German learners in total in Namibia (Goethe, 2016). In general, language learning, e.g. German, is good for the vocational future. The tourism sector in particular is one of the most successful sectors in Namibia. In 2015, the Tourist Statistical Report by the Ministry of Environment and Tourism Namibia reported 1 519 618 total foreign arrivals in Namibia, of which 90 729 were German tourists (MET, 2015). Especially in the Namibian tourism sector knowing technical terms in German is an advantage, but knowing how to speak this language could also help for business cooperation or when conducting and participating in advanced training programs in Germany.

The problem is, that learning the German language is only possible in major urban areas like Windhoek, for example at the Goethe-Institut Namibia or in schools or education facilities where German is taught. Furthermore, attending language courses or buying educational material is expensive for the learners and their educational institutions.

By using free mobile learning applications, more people would be able to learn new languages and thereby improve their job opportunities. Their learning would be independent of location and time. In the following, various free mobile learning apps will be presented that might already be used to support Namibians in their professional lives.

Table 1 Comparison of ICT in Namibia in 1990, 2011 and 2014

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet users per 100 people</td>
<td>0</td>
<td>12</td>
<td>14.8</td>
</tr>
<tr>
<td>Fixed broadband subscribers (% of total</td>
<td>-</td>
<td>0.794</td>
<td>1.76</td>
</tr>
<tr>
<td>Internet subscribers)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed telephone subscriptions (per 100 people)</td>
<td>3.74</td>
<td>7.17</td>
<td>7.78</td>
</tr>
<tr>
<td>Mobile cellular subscriptions per 100 people</td>
<td>0</td>
<td>99</td>
<td>114</td>
</tr>
<tr>
<td>Secure Internet servers (per 1 million people)</td>
<td>-</td>
<td>20.5</td>
<td>22.5</td>
</tr>
</tbody>
</table>

Extract from the statistics of The World Bank (World Bank, 2016)
2. Mobile Applications for Language Learning

Mobile learning supports the distribution of learning content and communication with and between students using mobile devices and related applications (e-teaching.org, 2016).
There are various free mobile applications, which support different kinds of mobile learning:

- For example there are mobile apps for knowledge management (e.g. the app “Evernote” (Evernote, 2016) helps to collect and organise personal notes), apps for organisational purposes in a student’s life (e.g. calendars, platforms including an overview of all grades, orientation guides for the campus and class response systems), apps that offer small learning units for any learning subject, as well as apps for documentation purposes (e.g. for documenting experiments or excursions).

In this paper, the focus is on free language learning apps that were created for adults. This means, that only German language learning apps will be presented, where users need at most a free account to gain access to the offered services. Most of these mobile learning apps support the learning of the basic words and phrases.

It must be said however, that mobile applications cannot replace a language course. Those who want to learn German properly, must practise the four language skills of listening, reading, writing and speaking regularly. Additionally, there should be a systematic learning of grammar and vocabulary. This can only be provided by a good language course, not an app (Stiftung Warentest, 2016). But for small learning units with simple content, such as for learning vocabulary or for memorisation, some of the following apps are very helpful. A selection is presented below:

- The free mobile application “African German Phrase Book” was built by the Goethe-Institut in Cameroon especially for people in Africa. It is similar to a pocket phrasebook: The app translates 150 German keywords and phrases into several African languages. Users can read these phrases both in German and in the selected African language and also listen to the audio file to learn the correct spelling (AGPB, 2016). To support Namibians in their professional life it would be advisable to expand the app with key phrases which they need in their daily business (e.g. as a tour guide in Namibia).

- “Lern Deutsch - Die Stadt der Wörter”, also created by the Goethe-Institut, is a free mobile game for beginners with no or very little knowledge of German (A1- Level). The game focuses on the same topics as the A1 - level courses (supermarket, public transport, restaurants, shopping). With this app users will learn their first words in German - with images, audios and key phrases (Lern Deutsch, 2016).

Due to the currently high number of refugees in Germany, many German education providers are developing supportive learning programs for learning German:

- The free mobile learning program “Einstieg Deutsch”, provided by Deutscher Volkshochschul-Verband, offers different learning topics for refugees. Alongside a vocabulary tutor, a special feature of this app is the ability to repeat and record German phrases and to compare them with the original audio file (Einstieg, 2016). Such mobile apps are not only suitable for refugees but for every German learner. Mobile apps like “Einstieg Deutsch” should thus also be used in average German teaching.

These presented mobile applications are very supportive, but so far, experience has shown that they are hardly used in Namibia to learn German. Reasons for this situation could be: These applications are still unknown to Namibians. Moreover, the technical infrastructure in educational institutions is often insufficient: For the mobile app “Lern Deutsch - Die Stadt der Wörter” continuous internet connection is needed to connect with other players worldwide. But Wi-Fi connections are still not a standard in educational institutions. Additionally, so far there is little training for teachers on how to use digital learning materials.

As shown, the content of these mobile applications often does not go beyond simple linguistic words or phrases (A-Level for beginners). Only a few mobile apps go further:

- For example the mobile game “Ein rätselhafter Auftrag” (by Goethe-Institut) prepares young adults for their new career (ERA, 2016). The topics “application process” and “job interview” are installed in a crime story that the
user has to solve. By doing so, young adults are motivated to learn important skills for their future career. And yet, this mobile application does not offer any specifications to a certain profession.

The aim of this paper is to present a concept for a mobile application that goes beyond the basic key phrases. It should also support people in their professions by teaching technical terminology that is needed in a certain professional field. The concept will be presented in the following chapter.

3. Presentation of the Concept for a Mobile Application to Support German Language Learners in the Tourism Sector

As already discussed, the tourism sector is one of the most successful sectors in Namibia. However, employees who work in this field were educated with classroom teaching and by using analogue media. To cope with the task of lifelong learning, they should also be taught by digital and mobile learning modes. Therefore, the aim of this paper is to present a concept for a mobile application for learning the German language. This application could assist employees in the tourism sector in communicating with their clients. Even after their graduation, users of this app could still practise their vocabulary and key phrases for everyday use in order to talk to German tourists. Tourist guides, hotel employees and people from the organisation management should be able to help, guide and advise German foreigners.

The mobile app is also ideal for people who have already completed a language course and who want to stay up-to-date with German, no matter where they are. This app could be especially helpful for people who work as a tourist guide on a lodge far away from any educational institution. Furthermore, there are many people who do not have the time to attend a language course after work. They could also benefit from the app. Moreover, the app could be used in classroom teaching: students are given tasks which they have to solve using the app. Also, one chapter of the app could be set as homework which would then be reviewed and discussed in class.

The following concept for a mobile application is the result of a subjective analysis of the previously presented learning apps. The mobile application will be named “German for Professionals” as a working title. Its characteristics are presented below. The mock-ups serve to illustrate the concept.

**Generic expandability and personalisation**

The mobile application should be generically expandable: It should offer learning units for not only professionals in the tourism sector, but also for engineering-related professions like brewing, IT, agriculture etc. But in the following scenario the concept will focus on functionalities for professionals in tourism. By structuring the app generically, it is possible to offer specific learning content to certain professional groups.
Learning units focus on technical terms
One focus of the app is that users will be able to learn and practise important job-related phrases and words. This is done by means of texts, images, audio files, and voice recognition.

Every day challenges
Every day (or every 2 to 3 days) a challenge is sent as a nudge or reminder to the app user. Thereby, the user will be encouraged to keep up with learning German.

The challenge invites users to think about a specific profession-related subject and to complete small tasks. Or in the case of a tourist guide, a challenge could be to start a conversation with a German tourist. If the user believes that he has fulfilled the challenge, he can mark that in a checkbox.

The Goethe-Institut posts similar small motivating challenges on their Facebook page “Goethe-Institut - Deutsch lernen”. Users can participate in the comments and also communicate with each other (Deutschlernen, 2016). However, in the context of personalisation the mobile app can offer more specific challenges for individual professional groups.

Furthermore, with these reminders the mobile app could announce when the next German language course will begin, where it will be located or when a German cultural event will be taking place in the vicinity.

Subject-related News
The app also provides a separate section with short subject-specific news and texts in simple German. The news will always refer to Namibia or Germany.
4. Discussion

The next step will be the evaluation of the presented concept and mock ups in a qualitative survey with volunteers from the target group. After implementation, the mobile app “German for Professionals” could finally fulfil its purpose in teaching employees in the tourism industry.

In November 2016 the new Goethe-Institut Namibia will be inaugurated and as a result the technical equipment will be improved. Hence, the Institute could serve as a role model for future educational institutions in terms of digital learning. With this strategy, this concept of the mobile application “German for Professionals” would be fitting.

Furthermore, there are many other free and supportive mobile applications and open educational resources available for other learning topics. These educational offers should be promoted more in Namibia and people should be encouraged to use them more intensively. This could be one approach to eliminating the educational inequalities which exist in Namibia. However, for this to be feasible, the technical infrastructure would have to be improved and teachers would have to be trained to incorporate more digital learning materials in their teaching.

References


THE INTEGRATION OF ICTS IN TEACHING, LEARNING AND ASSESSMENT (MOOCS, ELEARNING, ICTS IN ODL, OER’S: CASE STUDY OF NAMIBIA UNIVERSITY OF SCIENCE AND TECHNOLOGY (NUST)).

Prof E. Madejski and L. Jackie
Logistics and Transport Studies Section, Namibia University of Science and Technology
Email: emadejski@nust.na; Tel: (061) 207 2597

Abstract
We are living in a constantly evolving digital world and Information Communications Technology (ICT) has become an important instrument in the teaching and learning process of most teachers and learners. In order for the Namibian educational system to fully achieve the benefits of ICT integration, policies and strategies were recognised. Furthermore, in an attempt to make Namibia a knowledge-based economy and to ensure that quality education is accessible, learning platforms such as open educational resources (OER’s), Massive open online courses (MOOCs) and eLearning have been established. Integration of ICT in education provides new, meaningful and authentic activities which can help the learner to develop understanding and learn the skills relevant to problem solving. This is preferable to feeding students with more and more information and offer opportunities for delivering instruction at the same time. (Nuuyoma, 2012).

This study sets out to investigate the teaching and learning possibilities in an increasingly digital world and how ICTs can benefit the people in a developing country such as Namibia in particular. Findings revealed that ICT integration plays a major role in teaching, learning and assessment. The study identified obstacles such as insufficient computers connected to the internet, low internet speed and insufficient computers in the teaching and learning process at Namibia University of Science and Technology (NUST). For this research, secondary data in the form of journals and books was used; primary data was collected through structured interviews. Questionnaires consisting of open and closed questions were distributed to the sample students and lecturers at Namibia University of Science and Technology. Questionnaires were designed to obtain students’ views on ICT integration, challenges, opportunities and benefits.

Key words: ICT, MOOCs, OER’s, eLearning, Technology, integration

Introduction
Information Technology does not only benefit educational organisations by allowing them to work more efficiently and maximise productivity, but also to improve communication and the protection of records. Mdlongwa (2012, p. 1) defined ICT as a global process in which, information and knowledge are exchanged and shared through using communication devices such as cell phones, and technology such as computers to connect people. ICT is a system which seeks to intensify the productivity and efficiency of teaching, learning and assessment of modules. In addition, the use of ICT in NUST to intensify teaching, learning and assessment would be useful in assisting with overcoming some challenges of upgrading the efficiency and productivity of learning and teaching by narrowing the digital boundary.

The integration of computers and communication offers extraordinary opportunities to the education system, with their capacity to integrate, enhance and interact with each other over a wide geographic distance in a meaningful way in order to achieve the learning objectives (Madhumdar, 2006). The integration of ICT in
teaching, learning and assessment, enables lecturers and students to have access to the worldwide classroom. Madjumdar, 2012 further stated that, ICT opens up opportunities for learning in such a way that it enables the learners to access, extend, transform and also to share ideas and information via multi-modal communication styles and format. If NUST can become increasingly supported by ICT, then lecturing and learning will not be the same as before. The integration of ICT in the teaching and learning process will facilitate organisations such as NUST in reaching its goals and objectives.

Currently, NUST makes use of eLearning and open education resources which enable students to interact with lecturers and to access study materials at any time, regardless of where they are. According to Hylén (2007) ELearning involves digitised materials which are offered freely and openly for educators, students and self-learners to use and re-use for teaching, learning and research. The findings of this study could provide important information about the integration of ICT into the teaching-learning process. Thus NUST and other Universities such as UNAM and IUM can benefit from the findings of the present study. The outcome of this study might help the Ministry of Education and other concerned organisations in universities to design preventative, interventive and rehabilitative measures regarding the integration of ICT in teaching and learning, and issues and challenges affecting its use.

**Background**

Making Namibia a knowledge-based development paradigm is one of the key priorities set out in Namibia’s Vision 2030. The Education and Training Sector, has long been seen as the torchbearer for capacity development in Namibia, it is for this reason that the Ministry of Education in 1995, through the National Institute for Educational Development (NIED), developed a national policy for ICT in Education in Namibia (NIED 1995). The policy, which was further revised in 2000, identifies the justification for introducing ICT in educational institutions. In addition, the ICT Policy for Education was concerned with the provision of clear objectives and basic competencies for learners, students, and teachers in order to achieve key ICT knowledge and skills (Ministry of Education strategic plan, 2001-2006).

According to Alemu (2015), ICT integration in teaching and learning provides many advantages in the delivery of equitable, quality education, thereby providing an opportunity to improve the lives of the Namibian people. The need to use new technologies to raise the quality and efficiency of education cannot be over emphasised. It is imperative that children, parents, and teachers are exposed to ICT in order to improve the quality of education and the technical proficiency of our human resources, thus leading to increased productivity and accelerated development.

Literacy in information and communications technology is fundamental to life in our modern technological society. Coiro (2003) highlighted that in order to equip students to be literate lifelong learners and global citizens of the 21st century, we must successfully integrate ICT in teaching and learning. ICT is a valuable tool to enhance teaching and learning. For teachers, ICT is a professional resource, a mode of classroom delivery, and a source of valid and valuable text types. For students ICT provides opportunities to communicate more effectively and to develop literacy skills including skills in critical literacy. ICT is significant for researching, composing and responding. Furthermore, if ICT integration, more specifically in English classrooms, extends beyond its motivational value to allow students to become competent users, then they can improve their writing and reading skills (Becta, 2006).

This study examines how the integration of ICT in teaching, learning and assessment has contributed to promoting educational development at NUST. The paper will further explore the benefits associated with the integration of ICT into teaching-learning practices and its emerging challenges.
Research Objectives
The Primary Objectives
» The study sought to gain more insight into the benefits associated with the integration of ICT in teaching, learning, and assessment;
» To obtain students’ views on ICT integration, challenges, opportunities and benefits;
» Determine the challenges faced with respect to ICT;
» Determine the ICT modules used by NUST students and lecturers.

To achieve the objectives of the study, the following research questions were explored:
» How can ICT be used in teaching, learning and assessment at NUST?
» What are the ICT challenges faced by students?
» What are the benefits of ICT to students?

Research Methodology
Research design
For this research a qualitative approach was adopted. Data was derived from interviews and questionnaires. Consent was obtained before the questionnaires were handed out to students. The researcher waited while students filled in questionnaires, and the questionnaires were collected.
The sample selected consisted of 50 students to whom questionnaires were distributed. The sample comprised students from all six different faculties at NUST and included both genders and various ethnicities.

Research Instrument and administration
This study made use of structured questionnaires to obtain students’ views and to determine the challenges and benefits associated with the integration of ICT in the teaching and learning process. Questionnaires included open-ended and closed questions, questionnaires which were not completed in full were not considered for analysis. All the completed questionnaires were used for analysis.

Data analysis
Primary information collected by means of questionnaires was presented in graphs using Microsoft Excel. The descriptive statistical methods used to analyse outcomes were graphs and percentages.

Ethical Considerations
Research ethics are universal and concern issues such as honesty and respect for the rights of individuals. Identities of the research participants were not exposed, as no names of the respondents were required. Permission was obtained from the individual class lecturers before any questionnaires were handed out to students.

Limitations
The study evaluates how the integration of ICT can be used in teaching, learning and assessment, focusing on the Namibia University of Science and Technology; the study will further contribute to how ICT integration will help to improve the success of quality education in higher learning institutions such as NUST. The study was limited to only NUST students and did not account for external factors.

Reluctance to complete the questionnaires from students restricted the researcher from analysing all the data from the targeted population, some of the questionnaires submitted were incomplete. Of the 60 questionnaires handed out to the students, 8 were partially completed. Primary data collected was converted into charts and graphs for easier interpretation.

Literature Review
It is a proven fact that Information Communications Technology does improve the teaching and learning process. According to Mdlongwa (2012), the integration of ICT into the curriculum of learners is of immense benefit to them. To start with, students exposed to Information Communications Technology tend to develop skills that will give them an edge in an ever-increasing technology-saturated work environment. Despite the
benefits associated with technology, Information Communications and Technology too has barriers. “A barrier is any condition that makes it difficult to make progress or to achieve an objective” (Bingimlas 2009). He further stated that few of the barriers are resistance to change and negative attitudes towards the integration of ICT in teaching, learning and assessment. Higgins (2004), however, emphasised that there is always a problem when it comes to the acquisition of the necessary infrastructure from administrations who are the financial controllers and decision makers of any organisation.

The process of Integrating ICT into teaching and learning is complex and one that may encounter difficulties. These difficulties are known as “barriers” (Schoepp, 2005). Some studies have investigated the reasons for teachers lacking confidence with the use of ICT, for example Beggs, 2000 asserted that the teachers’ fear of failure was caused by a lack of confidence, lack of training and lack of accessibility. According to Gomes (2005), ICT integration in science teaching needs a technician and if one is not available, the lack of technical support can be an obstacle. The lack of confidence is a problem linked to the previous two issues: the lack of access to resources and lack of teacher competencies. Regarding the availability of ICT resources, perceived ability to use ICT, and having the basic skills to operate it may increase the teachers’ satisfaction with modern technologies which may motivate teachers to integrate ICT, in education. However, we should not overlook the provision of training, enough time and technical support.

**Research Findings and Discussion**

It is acknowledged that Information Communication Technologies (ICTs) are revolutionising the teaching and learning process in universities (Moya et al, 2012). According to Yusuf (2005), ICT is no longer a matter of choice it is a necessity in today’s world which is driven by technology and knowledge. Across a range of educational applications, ICT is being harnessed to improve the efficiency, accessibility and quality in teaching and learning. This research intends to explore the concept of ICT integrated at NUST, the benefits associated with this integration as well as the challenges faced with ICT integration. Findings of this study are discussed below.

**Figure 1: Students’ level of study**

In order to successfully analyse how ICT is used in the teaching and learning at NUST, questionnaires were randomly distributed to students, the sample to whom questionnaires were disseminated consisted of 35% first years, 46% second year, 15% were third years and 4% of the participants were in their final year.
How often do you use a computer for school related activities?

The study revealed that majority (42%) of the students use computers on a daily basis, 35% use computers every week and 23% use computers almost monthly for school related activities.

What are some of the ICT factors that affect the teaching and learning at NUST?

While it is probable that Information and Communications Technologies affect education and training positively by bringing a better system of teaching and learning, a more realistic critique of the situation is that which realises that in some countries the desired improvements are difficult to achieve. There are barriers to the successful realisation of the argued wide-ranging opportunities for teaching and learning that can be provided by ICTs. The majority of the participants (33) highlighted that sharing slow Internet-connected computers means that one only finds information after many hours and this consumes precious time, other challenges include computers that need to be repaired, or an insufficient number of internet-connected computers.

ICT use in teaching and learning impacts positively on student motivation and achievement?
Students are aware that ICT integration in teaching and learning plays a major role, this is because 94% of the students are in support of the statement, whereas 6% think the statement is false.

**Which of the following do you think provides effective support to students?**

**Figure 5: ICT Modules**

Most respondents indicated that the e-Learning platforms provide effective support to students, followed by open educational resources and finally Massive open online courses.

**Why do you think that computer user skills courses are important?**

Information technology is “the use of manmade tools for the collection, generation, communication, recording, re-management and exploitation of information (Ogbomo & Ogbomo, 2008). It includes those applications and commodities, by which information is transferred, recorded, edited, stored, manipulated or disseminated” and includes computers, internet, mobile phones, emails etc. Student’s responses are emphasised below:

- It will make work easier, for future work purposes
- Gain technical skills
- Give clear knowledge of using many applications
- Help in accessing study materials uploaded on the portal
- Broaden knowledge in computer
- It is a pre-requisite for other modules
- Enable students to create data bases, type faster and create PowerPoint presentations
- To know basic computer functions
- Help in engaging in the word of information

**How can ICT be used in teaching and learning?**

The use of ICT enables students learn by providing access to large quantities of information on people, places and environments. It also provides the framework for analysing data to investigate patterns and relationships in research. ICT supports them in organising, editing and presenting information in many different ways. Here the researcher wanted to have input from the respondents; their responses were as follows;

- By using an eLearning method
- Prevent plagiarism and help one obtain accurate information
- To transfer information from one person to the next
- Make use of studying slots on eLearning
- Distribute notes on eLearning
- Help gather data, information and knowledge
- To access study materials online
- Make use of computer and internet
- Usage of on-line activities and presentations

**What impact does ICT exposure at NUST have on your future employment?**

- It helps you get used to the use of ICT during work time
- It prepares the students to be competent by making it easier for them to analyse information clearly
- It affects it in a good way because most jobs requires ICT knowledge
- Both positively and negatively because it depends on the areas of employment
- Great impact because one needs to know how to operate a computer
- Students get to be more computer literate
- Necessary for job employment, when one has the ICT skills
- It is effective, in a way that it helps students find necessary information
- It helps students with the abilities to utilise computers, when doing presentations
- Necessary for online studies and Interviews online
Conclusions

Education in today’s environment without the assistance of ICT is unthinkable. Using ICT in education cannot be avoided as it is a tool for the empowerment of educators and students, towards a more effective and efficient education. There can be no doubt as to the importance of ICT integration in teaching and learning. However, its integration into the curriculum raises serious questions concerning access, equity and quality.

The main objective of this study was to appraise the integration of teaching-learning and Information Communications Technology (ICT), and to further explore the process of integrating ICT into teaching-learning practices and its emerging challenges. Findings of the study highlighted that the following issues must be addressed; damaged computers, insufficient internet speed, inadequate number of internet-connected computers, and a deficient number of computers and students experiencing problems with accessing computers. Despite the availability of resources being the stumbling block in using e-books, there are a variety of advantages that the use of technology can provide to teaching and learning. Advantages which are all too often missed by NUST students due to enduring ICT challenges.

ICT-enhanced learning environment facilitates active, collaborative, creative, integrative, and evaluative learning as an advantage over traditional learning methods. In other words, ICT is becoming more of an enabler in the realisation and implementation of the emerging education of constructivism that gives greater responsibility of learning to students. The fact that taking responsibility for one’s education is an important contributor to the students’ future success in the workplace cannot be over emphasised. This then highlights the importance of smooth reliable ICT structures, hardware and software in the higher education learning space.

Recommendations

There is a consensus that the development of any country depends on the quality of education programs offered to its citizens. ICTs, despite their known limitations, are believed to be beneficial in this regard. The computer and the internet are especially useful to enhance student engagement in learning and positively impact student performance and achievement (Anderson & Van Weert, 2002).

Based on the findings of this research paper, it is recommended that steps should be taken to make use of on-line presentations, and provide adequate training for lecturers to gain full confidence with regard to ICT. ICT integration can have a positive impact in the teaching and learning process, thus there is a need to update and upgrade the current education system in order to achieve quality education, specifically integrating Information Communications Technology in teaching, learning and assessments at NUST. Hence, efforts to activate lecture-students interaction via open educational resources (OER’s), Massive open online courses (MOOCs) and e-Learning will contribute towards making Namibia a knowledge-based economy and ensure quality education. Provision of notes, assessments, activities and all school related tasks online will initiate progress towards the participation in ICT integration within the University. Furthermore, there is a need for the Namibia University of Science and Technology (NUST) to fully grasp the benefits of ICT integration.

It is recommended that all lecturers should make maximum use of ICT during their lectures because it has a great impact on students’ learning. The ICT modules should be compulsory to all NUST students because it’s of great importance and will help the students to access information electronically. As per Ozoemelem (2009), this study also strongly recommends that students should be trained to use advanced searching techniques for retrieving study materials.

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CHALLENGES OF ICT INTEGRATION AMONG DISTANCE LEARNERS AT THE OPEN UNIVERSITY OF TANZANIA: A CASE OF TANGA REGIONAL CENTRE

1: Dr. Rwejuna Zacharia Reginard, 2: Ramadhan Rashid Singano
The Open University of Tanzania
Dar es Salaam Tanzania
dos@out.ac.tz,
reginard.zacharia@out.ac.tz

ABSTRACT

The study focused on the challenges of ICT integration among distance learners at the Open University of Tanzania (OUT): a case of Tanga regional centre. Two objectives guided the study: these were: to determine barriers facing distance learners as they integrate ICT in their learning and establish effects of weak ICT integration in students’ learning at OUT. The study was guided by a qualitative research design. The study used 37 respondents. The findings identified that the barriers in ICT integrations among the OUT students at OUT include a lack of or inadequate skills and knowledge on using ICT, problems of power in rural areas, the high cost of internet services, negative beliefs that ICT devices are luxurious items and a weak financial position which makes the purchase of ICT devices like iPads difficult. The findings further showed that poor grades in examinations, shortage of relevant study sources and isolation were the effects of low ICT integration among these students at OUT. Recommendations to improve the ICT integration at OUT are attached.

Key word: ICT integration, Barriers, iPad, CD ROM

Introduction

The Open University of Tanzania (OUT) was allowed to operate under the Act of Parliament of 1992. The university uses a distance learning mode to deliver its education to more than 29 regional centres and to various coordination centres located in Egerton - Kenya, Kigali - Rwanda, and Windhoek Namibia. Other centres are in Malawi, Zambia and Uganda. In 2008, the Open University of Tanzania adopted a policy of using ICT in many of its operations. This reduced the reliance of the Open University of Tanzania on printed materials. For example, at the beginning of the academic year, the university would distribute the course outlines, lecture series and any relevant material for the students’ studies on disks or CD roms. This meant that students had to learn and use ICT in their learning. Other faculties introduced a moodle-learning management system which would allow the students to see lecturers’ postings, discuss and submit queries about their learning. However, in the course of adopting these learning management systems (moodle, internet and CDs) some of the students were greatly challenged. Others had to drop out and join conventional systems where they could assemble and listen to the lecturers; other students took time to learn via this new innovation. Thus, this study focuses on investigating the challenges facing learners in integrating ICT in their learning at (OUT), case of Tanga regional centre.

Statement of the Problem

The purpose of establishing the Open University of Tanzania was to allow mass population access to education (Muhehe, 2002, Rwejuna 2008). Although OUT has adopted an ICT policy (integrate) (ICT) to deliver education, it seems adult learners are challenged with this innovation. This has resulted in some of the distance learners opting to join other universities, while the students who continue take too long to complete their studies, Rwejuna (2013), and others have dropped their studies. This scenario prevents OUT from achieving its mission and vision of allowing more people to study / access education at OUT using the distance learning mode.
Objective of the Study
The purpose of this study is to investigate what the major challenges are as OUT students integrate ICT in their learning.

The specific objectives are to analyse:
i. Barriers facing distance learners at (OUT) as they integrate ICT in their learning
ii. Effects of weak ICT integration of students learning at OUT.

Significance of the study
The University expected to get feedback on the barriers facing ODL learners as OUT students integrate ICT in their learning, to be able to determine what improvement is needed to improve students’ learning using ICT. The study provides feedback which will act as a guide towards the improvement of resources for students learning e.g. ICT infrastructure (internet and computer facilities). The study is likely to reveal the necessary level of training which is needed for both students and lecturers so that ICT integration can become an effective mode of delivery of education at OUT.

Research Questions
i. What are the barriers facing distance learners as OUT students integrate ICT in their learning at OUT?
ii. What are the effects of weak ICT integration in students’ learning at OUT?

Literature review Concepts of ICT
Information and communications technology (ICT) is the technology used for communicating, transmitting, storing, creating, sharing and exchanging information (URT, 2007). It involves the use of devices such as radio, telephone (mobile and fixed lines), computer, iPad and computer and internet, including both hardware and software. It also includes the communication associated with these technologies, such as electronic mails, text messages and radio and television broadcasts (URT, 2007). In many settings today, distance education utilises modern ICT (UNESCO, Institute for Information and Communication Technology in Education, 2002). The use of ICT in teaching and learning enhances learners’ motivation, skills, concentration, cognitive processing, independent learning and critical thinking abilities. It ensures positive learning attitudes among students of all ages (UNESCO, Institute for Information and Communication Technologies in Education, 2002).

The Role of Information and Communication Technology in Distance Education
Information and communication technology (ICT) increases the flexibility of delivery of education so that learners can access knowledge anytime and anywhere. ICT can influence the way distance learners are taught and how they learn, as in this way the teaching-learning processes are learner-centred and not teacher-centred. This in turn would better prepare the learners for lifelong learning as well as improving the quality of learning. (Moore and Kearsley, 1996). Information and communication technology (ICT) has the potential to innovate, accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow’s workers, as well as strengthening teaching and helping schools change (Davis and Tearle, 1999; Lemke and Coughlin, 1998; cited by Ul-Amin, undated). ICT improves educational content and effects more effective teaching and learning methods. ICT improves the learning process through the provision of more interactive educational materials which increase learner motivation and facilitate the easy acquisition of basic skills (Price Waterhouse Coopers, 2010). The use of various multimedia devices such as television, videos, and computer applications offers a more challenging and engaging learning environment for students of all ages (Price Waterhouse Coopers, 2010).
Challenges of Information and Communications Technology Integration in Distance Education Delivery

Reviewed literature revealed several setbacks which hinder the integration of information and communication technology (ICT) in open and distance learning. Guo and Cai (2006; cited by Kagugu, 2011) maintain that ICT has not been effectively integrated into everyday distance teaching and learning delivery which still relies on traditional methods. Connection to the internet is very expensive in developing countries and the hidden costs for the end-user in accessing the internet are also very high (Guo and Cai, 2006; cited by Kagugu, 2011). On the part of the distance learners and their tutors, studies show that many of them lack the technical and pedagogical skills relevant for using ICT tools, like computers, internet and tablets in the teaching-learning process at a distance. (Chapman et al., 2004; cited by Kagugu, 2011). Sife et al., (2007) found challenges to be a lack of awareness as well as negative attitudes towards ICT, inadequate funds for ICT infrastructure and staff development, insufficient qualified ICT staff and a lack of a systematic approach to ICT implementation. In their study Swarts and Wachira (2010) found that the use of digital and eLearning environments has not been widely adopted in most of the universities in Tanzania with the exception of the Open University of Tanzania (OUT) and the University of Dar es Salaam. Swarts and Wachira (2010) depicted the following challenges in deploying and using ICT effectively in education: inadequate ICT and electricity infrastructure, especially in the rural areas. In the rural areas telecommunication was limited to the commercial and business centres, internet access was unavailable or less-available and costs of accessing the internet were high. Rural areas were still underserved due to poor internet access and electric supply and their costs (Swarts and Wachira, 2010). In 2006, only 10% of the total population of Tanzania was connected to the national power grid, with 1% of this being in the rural areas. In Tanzania the cost of connectivity was very high which created barriers to the spread and use of internet, which is a major vehicle for data transfer and access to information, resulting in a low level of internet penetration and patterns of using ICT (Swarts and Wachira, 2010).

Research methodology

Qualitative research design was used in this study. Patton (2009) holds that qualitative design is flexible; it is suitable to accommodate studies searching for experiences of phenomenon. This study seeks to find barriers of ICT integration among OUT distance learners. To capture how, and exactly what the experience of challenges of ICT integration in ODL is, qualitative design is appropriate, as it allows for flexible questions that generate in-depth information about the phenomenon. An advantage seems to be difficult for quantitative design with a survey method. The sample for the study comprised dropout students and continuing students at OUT in Tanga. There were 37 informants. Qualitative design is guided by purposeful sampling techniques (Patton, 2009), therefore, the same technique was employed to get the potential respondents to respond to the interviewer’s questions. Patton (2009) insists on a small sample size, what matters is the sample which gives maximum information for the study. Two methods were used to collect data; these were interviews and a focus group discussion. Interviews were conducted by the research assistants who wrote the responses in the transcript and later reported the information to the principal researcher. A group focus discussion was held with a group of continuing students who were available at Korogwe TTC during the examination session in 2015. The analysis of data was done thematically as is proposed by Bogdan and Bicklen (1998); when the information was read, get a picture, synthesise put into categories and themes to inform audience on the barriers of ICT integration in the students’ learning at OUT.

Data Presentation

Barriers Inhibiting (OUT) Learners in Integrating ICT in their Learning
Lack of and Inadequate Skills and Knowledge on Using ICT

It was revealed through interviews and focus group discussion methods that there are a good number of distance learners of the OUT who do not have any skills and knowledge for using and working with ICT devices. Others have inadequate knowledge and skills for working with those devices. Inadequate and lack of skills and
knowledge for using ICT devices were found to impede distance learners of the OUT from using ICT devices and they develop negative perceptions of ICT integration in ODL. The following are the views of one of the respondents during the focus group discussion:

I have no ABC of using a computer. As such, I am not willing in working with a computer. But because some of my work needs to be typed, I sometimes use my daughter who types for me. In her absence, I take my work to a nearby stationer and hire a shop assistant there to type my work.

During an interview another respondent had the following to say on lack of skills and knowledge of using ICT devices:

We were taught ICT theoretically, mainly on how to use a computer. The lessons discouraged me very much and made me hate the use of ICT devices because we were learning things which we did not see.

The following are explanations of another respondent during an interview at Magoma, Korogwe:
I have no interest in computers and tablets or iPads mainly because I do not know how to use them. I tried to undergo private training but, with family and work obligations, I failed to cope.

High Costs of Internet Connection and of Buying ICT Devices
The interview and focus group discussion revealed that high costs of internet connection and of buying computers, laptops and other ICT devices is another barrier to ICT use and a reason for the distance learners of the OUT to have negative perceptions of ICT integration in ODL. The following are the words given during an interview by a respondent who had dropped out of her studies:

With my low salary I cannot manage to own a new laptop. In the beginning of my studies I thought I could manage the cost of internet connection at the internet café. However, in reality this was not the case. T.shs.1000/= for every 30 minutes of internet connection at an internet café is so high that I could not manage to pay frequently. During a focus group discussion session, another continuing OUT student explained about high costs of ICT devices, she said:

If you want a new and good computer you must have not less than T.shs. 650,000/=, yet you must also possess an external hard disc which is about T.shs.150,000/=, a modem about T.shs. 30,000/=, a printer of at least T.shs. 150,000/= and frequent internet bundles to access the internet. Total cost of all those items is too high for me and many common civil servants to manage. Even if one decides to turn to a smart phone which you can use for distance learning it will cost one not less than T.shs. 200,000/=.

A Belief that ICT Devices are Luxurious
In the villages of Korogwe, Handeni and Lushoto during a focus group discussion and interviews, respondents revealed that some students of OUT believe that computers, smart phones, tablets and similar devices are items for the wealthy people. One of those respondents said:

We civil servants in the villages live and work according to how the situations in villages allow us to. I do not think of using such luxurious things of the well-off people, like a computer and tablet in my work or studies while the environment is not conducive for using such items.

Lack of Internet Network and Weak Internet Network in the Rural Areas
During the interviews and focus group discussion the respondents explained that:
Look at your mobile phone. Is there mobile network? No connection! You can’t even make a call. That means no internet connection in this area. If you need internet network you should follow that road going to Dindira Tea Factory. How can one convince me to develop an interest in owning and using a laptop or Smartphone in a study area where there is no connectivity?
During an interview at Manka village in Korogwe district another respondent claimed that:
Internet network is unavailable at some places here at Manka village. In other places it is available, but weak. 
Sometimes I buy a 24 hour bundle or bundle for a week but I fail to get internet connection during the whole
duration of a week or 24 hours. My android tablet shows that I am connected but I do not access internet
services.

**Lack of Electricity in the Rural Areas and Frequent Electricity Cut-off**
The interviews and focus group discussion revealed that there are rural areas which do not have a supply of
electric power. The views of some respondents justify this reality, including the following views of a respondent
who lives at Kwematuku village in Handeni District:

Lack of electricity is a big problem at our village. Even if you have a computer and smart phone, you cannot
work with them here because those items need a reliable supply of electric power to use them effectively.
Kwemsala has not been supplied with electricity. This limits the use of smart phones and computers, which
demoralises me from owning and learning how to use a computer.

**Distance Learners’ Financial Constraints**
The interviews and focus group discussion showed that many distance learners have a low economic status
and so they cannot easily purchase the quality ICT devices they are supposed to own. The following are views
of one of the respondents during an interview:
Many of my fellow distance learners and I are of so low an economic status that, with many family obligations,
we fail to manage the costs of good laptops, a modem, desktops and external hard discs.

**Effects of weak ICT integration in students’ learning at OUT**
The barriers presented above have various effects on the distance learners of the OUT, as revealed during the
focus group discussion and interviews.

**Difficulties in Getting Information and Study Materials**
Difficulty in accessing enough and relevant materials which are relevant for the courses of study of distance
 learners is one of the effects revealed by the respondents during focus group discussion and interviews. A
continuing OUT student of Songe, Kilindi had the following to say in a focus group discussion:
As I cannot access the internet at this village, I face a problem of shortage of study materials relevant to my
course. Sometimes the books I use do not have the content I need and mobile phone internet is inaccessible.

**Lack of Intrinsic Motivation to Pursue Studies**
The barriers described above contribute to distance learners’ lack of intrinsic motivation to pursue studies
through a distance mode, as revealed by interviews with a primary school teacher at Mahenge, Korogwe:
In the beginning I thought it is easier to study at a distance while working than by joining a conventional
university. Now I have realised that it is not so easy due to the lack of internet connection, electricity and my
inability to use a computer.

**Increased Loneliness**
The interviews and focus group discussion revealed that loneliness of the distance learners is deepened by low
use of ICT devices, as one interviewed respondent at Muheza said:
At my residential area at Kwameta I cannot receive a call as there is no mobile network. Mobile internet is also
a problem here. This makes me feel lonely. If I want to call somebody I must go to a place about seven to ten
kilometres from my home place.

**High Costs of Travelling**
The interviews and focus group discussion revealed the high costs which distance learners of the OUT incur
in travelling to distant places with internet cafés and stationers. The following are words of a primary school
teacher of Dindira during a focus group discussion:
Internet connection here at Dindira-Kwefingo is very weak and in some places it is inaccessible. Moreover, I am not competent in working with a computer. I have to travel to Korogwe town to access the internet at the internet café or have my work printed at a stationer whenever the need arises. A go-and-return bus fare is T.shs. 6,000/=, I have to buy breakfast and lunch there for at least T.sh. 12,000/=. Stationery (typing, photocopying editing and binding) and internet services (downloading, communicating with fellow students and tutors and accessing important information) cost about T.shs. 15,000/=, making a total cost of T.shs. 33,000/=.

Another continuing undergraduate student of the OUT commented as follows during an interview: There are no internet and stationer services here at Tewe village and frequent visits to internet cafés and stationers at Korogwe town is very expensive in terms of money and time.

**High Costs of Internet**

The interviews and focus group discussion revealed high costs which distance learners incur in accessing the internet and having their work typed, printed, photocopied, and other necessary internet and stationer services. One of the interviewed respondents with such views said:

Imagine you have 135 pages which you have to type, print, photocopy and bind. At Korogwe typing a normal black and white page on Microsoft word costs T.Shs. 500/= a page, on Microsoft excel and tabulated Microsoft word the cost is T.Shs. 1,000/= printing costs T.Shs.500/= a page and T. shs. 1,000/= for a tabulated page. Photocopy costs T.Shs.100/= a page. For 135 pages the total cost is not less than T.Shs.150,000/=. To get internet connection at an internet café it is necessary to pay about T.shs. 1,000/= per hour.

**Another respondent said during a focus group discussion:**

Even if you have your own device for accessing the internet, the cost of internet bundles is high - 1GB for about T.Sh. 1,000/= or T.Shs.1,500/= per day; 1GB for about T.Shs. 3,000/= or 4,000/= per week. Still there is the cost of printing the downloaded materials, which is necessary for me and many of my fellows, as we do not have storage devices, like flash discs, memory cards and external hard discs.

**Low Pass Grades**

Focus group discussions showed low pass grades to be another impact of the challenges of using ICT in distance learning. One of the interviewed respondents with such views said:

In the first year of my course of study my overall academic performance was very low. The reason is that I could not get enough and relevant study materials as there is no electricity in our village, no internet and mobile network and no internet cafés. Even if you have your smart phone it is useless in this village. In my second year I failed ‘OEG 223: Remote Sensing and Quantitative Methods in Geography’ and I was required to sit for a supplementary examination for that course”.

**Prolonged Course Completion**

Focus group discussions revealed that there are distance learners of the OUT who only complete their courses of study beyond the formal or official duration due to barriers to integrating ICT in ODL. One of the respondents had the following to say:

I postponed sitting for the examinations when I found myself unprepared for the examination. I do not own a computer or smart phone, and several times I could not to manage the high costs of a stationer and internet café. The state of having few and no in-depth study materials reduced my study speed and morale…

**Discussion of Findings**

**Barriers inhibiting OUT learners from Using ICT in their Learning**

**Lack of and Inadequate Skills and Knowledge on using ICT Devices**
Research findings revealed one of the barriers to using ICT among distance learners of the OUT to be a lack of skills and knowledge on using and working with ICT devices which contributes to their negative perceptions about learning with them. The findings showed that some of the distance learners were only taught in theory how to use computers, which made those lessons difficult for them and not interesting, hence they acquired almost nothing. The findings also showed that OUT students who cannot use computers, iPads and tablets take their work to commercial stationers where they hire attendants to type and organise their work. Others use their relatives, like daughters to help them do their work. The study findings also noted that there were individuals who underwent private ICT lessons but failed to master and complete their courses due to a lack of enough time and financial resources because of family obligations. These findings concur with the findings of Nihuka (2011; cited by Nihuka and Ngimi, 2013) who revealed that many of the OUT students have low competencies on basic and internet applications. This finding established under this section extends the finding established by Galusha (1998) that the majority of the adult distance learners are not conversant with the use of ICT equipment and thus have negative attitudes.

**High Costs of Internet Connection and Buying ICT Devices**

Research findings revealed that high prices of desktops, laptops, smart phones, external hard discs, modems and other digital devices contribute to distance learners’ negative perceptions about ICT integration in their learning. Research findings revealed that most of the distance learners of the OUT have low salaries and they cannot finance family needs (like foodstuffs, clothing, transport costs, children’s school fees, etc.) and remain with a sufficient amount of money to purchase a desktop, laptop or smart phone. An example cited by a respondent in the findings shows that a new and good computer costs not less than T.shs.650,000/=, an external hard disc around T.shs.150,000/=, a modem about T.shs.30,000/=, a smart phone about T.shs.200,000/=, a printer at least T.shs. 100,000/= and frequent internet bundles to access the internet. The total cost is really so high that many distance learners of the OUT do not manage, contributing to negative perceptions about ICT integration in their learning.

Regarding the costs of internet connection, the majority of the OUT students cannot manage the costs of the bigger and more efficient digital bandwidth, like those of Uhuru one and TTCL. As such, a majority of them depend on the internet provided by the mobile phone companies, like Vodacom, Airtel and Tigo. As such, in areas where there is no or unreliable mobile network, there is also no internet network or unreliable internet network.

It was noted in the research findings that many students of the OUT incur costs of internet connection at the internet cafés of about T.shs.1000/= per hour. When one buys one GB-bundle of 24 hours one incurs the cost of between T.shs.1000/= and T.shs.1500/= or between T.shs.2500/= and T.shs. 35 000/= for an internet bundle of one month. It is clear that with frequent use of the mobile internet, many students of the OUT cannot afford the high cost for the necessary internet connection. This inhibits them from using ICT effectively in their learning. These findings concur with the study done by Nyandara (2013), who noted that access to the internet is very expensive in cases of connection as well as hidden costs to end-users in accessing the internet. This finding is supported by Rwejuna (2013) who established that ODL learners are not able to meet the costs of ICT such as purchasing a laptop computer and paying for an internet café and browsing charges; as a result they drop out and join other systems of learning which are confined to prints.

**A belief that ICT Devices are Luxurious**

Research findings revealed that the OUT students, particularly those who live in the rural areas, regard smart phones, tablets, laptops and similar ICT devices as luxurious items to be owned by wealthy people. Individuals with such a belief include the civil servants working in the villages, who claim that due to their low economic status, they cannot buy ICT devices and so they do not think of purchasing them as they are luxurious items for the wealthy people, most of whom are found in towns. The findings also reflected views of civil servants working in the villages that the villages are not conducive for ICT devices to operate, because their socio-economic and physical environments are less developed. This contributed to the negative perceptions among the distance learners of the OUT. These findings concur with those of Swarts and Wachira, (2010) who found the widespread view that many people consider owning and using ICT tools as a status symbol rather than as important working tools.
Lack of Internet Network and Weak Internet Network

Research findings identified that internet network in the country does not cover all areas in Tanzania. The rural areas are affected more by this problem. It was noted that because of the lack of internet connection, distance learners of the OUT at the villages do not realise the importance of owning ICT devices, like tablets and laptops. There are places of the villages with mobile network but with weak and unreliable internet network. When distance learners connect to an internet network they get messages that they are connected, but actually when they attempt to access specific websites or download various materials the internet fails and they cannot do anything. This has discouraged distance learners from owning and using ICT devices for a long time and consequently it has contributed to the low integration in using ICT devices in their studies. The findings above concur with those of Swarts and Wachira (2010) who noted that internet connectivity and other supporting infrastructures are inadequate, unreliable and wide areas of the country are not covered. They found insufficient ICT infrastructure particularly in the rural areas (Swarts and Wachira, 2010, Agyemang 2010, Mushi, 2006).

Lack of Electricity in the Rural Areas and Frequent Electricity Cut-offs

Research findings disclosed that a lack of electricity in the rural areas and frequent electricity cut-offs in almost all parts of Tanzania is one of the barriers which limits distance learners of the OUT from being able to use ICT devices effectively. The findings revealed that many Tanzanian villages have not been connected to the electricity supply of TANESCO, hence inhibiting the rural distance learners from using ICT devices such as laptops, tablets and desktops. Lack of electricity is a big challenge in many villages like Mghambo and Zege in Korogwe so that a computer, tablet or smart phone in these villages is almost useless because a reliable electricity supply is needed to use them effectively. This demoralises the distance learners in rural areas from owning and learning how to use computers. The findings noted further that while great emphasis is placed on using computers, mobile phones and other ICT devices, relatively little has been done to ensure that the villages are electrified. Regarding the frequent cut-off of electricity, findings of this study noted the frequency of the cut-offs of electricity in various places in the country. The findings identified a problem for distance learners with second-hand laptops with batteries which do not keep power for long, an abrupt cut-off of electricity can cause a loss of their unsaved academic work. When battery power runs out or power is cut off, a student can no longer work on a computer and all that he/she had planned to do on a computer on a particular day cannot be done. Many of the associated activities, like printing, typing, downloading and charting cannot be done. These findings concur with the findings of Swarts and Wachira (2010), who found an inadequate electricity infrastructure, such that in 2006 only 10% of the total population of Tanzania was connected to the national power grid, with only 1% of that figure being in the rural areas.

Financial Constraints

The findings of this study showed that many distance learners are not in a financial position to be able to afford to purchase quality ICT devices like good desktop computers, laptops, modems, external hard discs and printers, bearing in mind that they have other family and personal financial obligations to meet. An example is a primary school teacher, whose take home salary is about T.shs.540,000/= . With such a low salary the teacher cannot meet family needs and still have enough cash remaining to purchase ICT devices. Such findings are similar to the findings of Rwejuna (2013) who found that, due to their low incomes, distance learners of the OUT face the problem of paying their tuition and examination fees as they have other family obligations, such as kids’ school fees and domestic obligations.

Effects of weak ICT Integration to the Students ‘ Learning at OUT

Study Materials and Information

Findings of the study have shown that there are distance learners of the OUT who face the shortage of sufficient and varied study materials relevant for their courses of study. The findings indicated that while those learners may find it difficult to buy and use computers which they could use for downloading study materials relevant for their studies, they find it even more difficult to obtain a variety of relevant study materials which are necessary for their studies without using ICT devices and the internet. The findings indicated that there is a great difference in understanding the lessons between those students who do not have ICT devices, such as laptops and
those who do own and use ICT devices. Study findings also revealed that the distance learners fail to get the necessary information related to their studies, such as information on the examination timetable, dates of examination registration and information on their academic progress. These findings relate to the findings of Mshangi (2013) who found that ICT facilitates self-assessment and improves students’ learning as long as they can have access to online web. This finding also extends the findings established by Rwejuna (2013) who holds that some of the OUT law students scored low grades in their courses and had to write supplementary examinations. Their low scores were due to their inability to use and integrate ICT into their learning.

**Lack of Intrinsic Motivation**

Findings of this study showed that in the beginning distance learners commence their studies willingly, but later when they face the types of challenges which have already been discussed the willingness and intrinsic motivations of those distance learners to pursue their studies through a distance mode weakens. In turn this leads to low academic performance and a high drop-out rate among the distance learners of the OUT. These findings should be compared with the findings of Noor-Ul-Amin (undated) who identified that ICT provides motivation to learn; it enhances the quality of education by increasing learner motivation and prolongs engagement.

**Loneliness**

Findings of the study showed that distance learners who do not use ICT devices and internet lack important communication with their fellow students and tutors for exchanging ideas. The study revealed that the distance learners also fail to sort and download study materials from the internet which would keep them busy most of the time and allow them to master their course contents. This increases their loneliness. The study found that because of their inability to call or e-mail a fellow student or tutor or connect to the internet to look for some important materials or information, the students feel very isolated and helpless in some areas. There is a contradiction between these findings and the finding of Noor-Ul-Amin (undated) who found that ICT promotes student engagement, which promotes a learner-centred environment. Noor-Ul-Amin also found that with the use of ICT a student can have easy access to people such as mentors, experts, researchers, professionals and peers all-over the world who serve as a valuable resource.

**High Transport Costs**

Findings of this study disclosed that these ICT challenges faced by the distance learners necessitate them travelling to places with stationers and internet cafés, most of which are located in the urban areas like Korogwe, Lushoto, Songe and Tanga. Study findings revealed that even the distance learners living in towns and on the outskirts, who cannot work with or do not own ICT devices will incur travelling costs for “bodaboda” or town buses to the town centre. Further cost are incurred in visiting stationers and internet cafés in order to have their work done and for downloading important information and study materials. The fare may be about T.shs. 4,000/= and stationer and internet café costs may be around T.shs. 15,000/= making a total cost of T.shs. 19,000/= for a single visit to an internet café and stationer. The findings indicated that this cost is so high for most of those distance learners that they cannot afford frequent visits to those places. The findings showed that distance learners living in villages have to incur increased costs of fares as well as meals (breakfast and lunch) apart from the stationer and internet café costs. The findings show that distance learners have to travel from their home villages to nearby towns. The minimum bus fare may be around T.shs. 6,000/=, breakfast and lunch may cost about T.sh. 12,000/= and stationer costs (typing, editing and binding) and internet services (downloading, communicating with fellow students and tutors and accessing important information) may cost T.shs. 15,000/=, making a total cost of Tshs. 33,000/= for just a single journey. The above findings are supported by Niwagila (2014) who holds that the rural students do not have the ICT facilities and to access them incurs additional costs.

**Conclusion**

As OUT moves towards digitalisation, there are some barriers that cause the students to fail to adapt to this ICT integration in their learning. This is reflected in the low ICT integration among the students. This is not a healthy scenario as the university cannot achieve its objective of mass education to meet the EFA philosophy. It also needs to be noted that, no one was born knowing how to use the computer for learning; everyone has had to
learn, so even the OUT students should be given the chance to learn. If the university intends to improve the ICT integration, the following are recommendations: increase the frequency of computer training, it should be continuous and this can be done by the ICT personnel at the regional centres. To be able to use the computer, the students should be given the freedom to use the regional ICT facilities free of charge, this will motivate inflexible students to change to using ICT in their learning. Regional centres can start by organising seminars and training on the use of ICT in education; this will be very stimulating for the students who resist change. The Project (owned by OUT) to sell tablets to the students is a strategic move to improve ICT integration among students at OUT.

Reference


APPLYING SEMANTIC ANNOTATIONS AS A MEANS OF PROMOTING REUSABLE LEARNING OBJECTS IN MOODLE LMS

Erkkie Haipinge
ehaipinge@unam.na
and
Gerhold B. Kooper
gkooper@unam.na
Centre for Open, Distance and eLearning, University of Namibia

ABSTRACT
Moodle is a popular open source Learning Management System (LMS) used by various educational institutions in the world to support teaching and learning activities. The University of Namibia has recently implemented Moodle as its LMS of choice. Central to Moodle is the management of learning content that is made up of learning objects, which are entities that can be used, re-used or referenced during technology-supported learning (Schreurs & Al-Zoubi, 2007). Although Moodle supports the sharing of learning objects across courses, thereby enabling the application of Reusable Learning Objects, this functionality is hardly used by educators due to lack of know-how. In this paper the sharing of learning content is to be seen within the framework of Open Educational Resources. The objective of this paper was therefore to use desk research and a literature review to explore methods of promoting trans-course content sharing on Moodle using the concept of semantic annotation. Initial results from reviewed literature indicate that the use of tagging is the easiest form of annotation that can be used on Moodle to enhance access to learning objects across courses. The implications of these findings are that there is a need to develop guidelines and training programmes for educators at the University of Namibia and at other Higher Education Institutions on the implementation of semantic annotations.

Key words: Moodle LMS, Reusable Learning Objects, OER, Semantic Annotations, Tagging
A FRAMEWORK FOR CONTEXTUALISING MOOCS FOR HIGHER EDUCATION AND ODL IN NAMIBIA

Erkkie Haipinge
PO Box 6657, Ausspannplatz, Windhoek.
University of Namibia
ehaipinge@unam.na

ABSTRACT
MOOCs (Massive Open Online Courses) are online courses that are open to anyone with Internet access. Pioneered in North America, they were developed for contexts with broader access to technology and wider access to Internet. As globally networked learning environments (GNLEs), MOOCs foster collaborative communities and learning in ways not conceived feasible until recently. The affordances of MOOCs such as the ability to access learning beyond one’s immediacy exemplify their benefits for open and distance learning, especially in developing countries that continue to consume rather than produce online courses. However, the worldwide relevance of MOOCs and their mode of delivery pose a challenge of contextualising learning content to the local needs educational institutions or individual students that choose to use the courses. This theoretical paper used a desk research approach by reviewing literature to investigate and propose ways of contextualising MOOCs to the Namibian higher education setting. It applied the principles of reusing and repurposing learning content, while suggesting the use of mobile learning as a technological delivery solution that is relevant to the local context. The paper also conceptualises a framework for inter-institutional collaboration for Namibian’s Higher Education Institutions to guide future efforts in the creation and sharing of credit bearing MOOCs.

Key Words: MOOCs, Online Learning, Higher Education, Connectivism

1. Introduction
Massive Open Online Courses or MOOCs are an innovative way of delivering learning through online methods to a vast number of students (Marsaglia, Kemp, Jefferson, Bradley & Silberman, 2014). According to Educause (2013, p. 1), MOOCs are distinctly massive in that they have no enrolment limitations; are open by allowing anyone to participate for free; are online, with learning mediated through the web; and are courses in that they have a structure with a defined scope for study with predetermined learning goals. MOOCs have a global reach irrespective of where they have been developed, as long as one has web access. With Namibia continuing to make strides in increasing access to the Internet, there is potential for an increased demand for MOOCs. This paper investigates the phenomenon of MOOCs from the standpoint of open and distance learning, and within the framework of open educational resources from a Namibian perspective.

2. Definition of a Problem
MOOCs are globally networked learning environments whose learning content reflects the curriculum of the providing institution. Most of MOOC providers are universities from the global north, resulting in a limitation of the relevance of learning content to the local contexts of countries in the global south, like Namibia. The modular delivery format of MOOCs also poses a challenge for educators in prescribing them to their students or integrating MOOCs into their curricula. At the same time, the reliance of MOOCs on networked and distributed learning frameworks is a source of tension with the traditional teaching and assessment methods at educational institutions.

3. Objectives of the Paper
The objective of this paper is to address the challenges described in the problem definition above by promoting an understanding of MOOCs, exploring pedagogical implications of MOOCs, identifying inter-institutional
collaboration frameworks on MOOCs for higher education institutions in Namibia, and exploring methods of contextualising MOOCs for Namibia’s local learning contexts.

4. Methodology
This paper uses desk research by reviewing literature on MOOCs, building a theoretical framework for conceptualising MOOCs in the context of open and distance learning, and addresses the set objectives. Literature for the study was exclusively obtained from online sources, both from peer-reviewed online journals, online policy document depositories and from the general web.

5. Theoretical Framework
The main theoretical concepts that frame this paper are open education, online education, connectivism and digital pedagogies. In this section, these concepts are defined and discussed within the context of MOOCs. The theoretical framework can be summed up in the diagram below.

![Diagram of MOOCs, open learning, learning theory and pedagogy](image)

**Figure 1: Relationship between MOOCs, open learning, learning theory and pedagogy**

5.1. Open Education
In the context of this paper, open education is seen as a “philosophy about the way people should produce, share, and build on knowledge”, proponents of which promote the elimination of barriers such as cost, outdated materials and legal frameworks that hinder people from “accessing high-quality educational experiences and resources” and “that prevent collaboration among scholars and educators” (Opencourse.com, 2016).

According to the Open Education Consortium, “open education encompasses resources, tools and practices that employ a framework of open sharing to improve educational access and effectiveness worldwide” (edX, 2016). It achieves this by taking advantage of emerging technologies to create and share educational resources “while harnessing today’s collaborative spirit to develop educational approaches that are more responsive to learner’s needs” (edX, 2016). The significance of the open education movement was illustrated through the Cape Town Open Education Declaration of 2007 that affirmed that “everyone should have the freedom to use, customise, improve and redistribute educational resources without constraint” (CTOED, 2008).

MOOCs are a phenomenon of open education whose aim is “to increase access to and successful participation in education by removing barriers and offering multiple ways of learning and sharing knowledge” (UNESCO & Commonwealth of Learning, 2016, p. 18). The nature of learning on MOOCs embodies the principles of open education such as open access, collaborative knowledge creation, continuous updating and sharing of information, freedom to use, remix and distribute learning resources, just to mention a few.
5.2. Online Education

Due to the diversity of educational practices and technologies used to support online education, various definitions exist in this regard. Online education in this paper is used interchangeably with online learning. The definition offered by Mohamed Ally (2008) is favoured in this paper for its comprehensiveness and wider application. He defines online education as:

"the use of the Internet to access learning materials; to interact with the content, instructor, and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience" (Ally, 2008, p. 17).

MOOCs by their very name as online courses fall within the field of online education. The pedagogy of MOOCs emphasises interaction and participation. Learners are expected to interact with learning content, usually in the form of videos, slides and reading materials, participate in discussions with fellow learners and course leaders, through which they are expected to construct new knowledge and meaning. In fact, interaction with fellow learners is much more expected and enhanced in MOOCs as opposed to ordinary, teacher-led online courses. According to Kuboni (as cited in Thiessen and Ambrock, 2008, p. 267)

The online learning environment has several features: it encourages a reduction in the emphasis on the didactic role of the teacher, while emphasising collaboration; it enables the development of process skills and knowledge building, rather than information and knowledge acquisition; and it supports collaborative group activities.

5.3. Connectivism

The digital age has given birth to the current learning landscape that is seen as “networked, social and technological” (Dunaway as cited in Ungerer, 2016, p. 2) where learners “create and share information by collecting, filtering, and customising digital content” (Mills as cited in Ungerer, 2016, p. 2). These are not only new skills that demand more from educators, it is also a landscape that cannot be adequately explained using traditional learning theories.

The inadequacy of traditional learning theories has led to George Siemens introducing the theory of connectivism that conceptualises the ubiquitous access to information. According to Siemens (2004, p. 4), “connectivist learning is focused on connecting specialised information sets, and the connections that enable us to learn more are more important than our current state of knowing”. From a connectivist perspective, learning takes place through an interaction between the individual and the network that is made up of nodes of other sources of knowledge, namely other individuals and organisations, enabling “learners to remain current in their field through the connections they have formed” (Siemens, 2004, p. 4). The principles of connectivism are as follows:

- Learning and knowledge rests in diversity of opinions.
- Learning is a process of connecting specialised nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is currently known.
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision-making itself is a learning process. (Siemens, 2004, p. 4).

Connectivism disrupts the existing models of different models for support learning by challenging the “notion that learning should be controlled by educators and educational institutions”, instead “information and ‘knowledgeable others’ are readily available on online networks through the press of a button for anyone interested in expanding his or her horizon” (Kop, Fournier & Mak as cited in Yeager, Hurley-Dasgupta & Bliss, 2013, p. 135). Connectivism also redefines the role of the educator, shifting it from that of a knowledge provider to that of facilitator of learners’ connections to knowledge networks which is a feature of web 2.0 that promotes
the idea of user generated content. According to Eggins and Slade (as cited in Anderson, 2008, p. 64) web 2.0 “supports the reuse and adaptation of content through support for the construction, distribution, and retrieval of digitised content that is formatted and formally described, using semantic web technologies”. This is a feature of both connectivism and MOOCs.

In MOOCs, particularly cMOOCs, connectivism is manifested in key activities that take place in the process of learning. According to Yeager, Hurley-Dasgupta and Bliss (2013), there are four of these activities, namely aggregation or curation, remixing, repurposing and feeding forward. Yeager, Hurley-Dasgupta and Bliss (2013) explain that aggregation involves the listing and sharing of resources with participants on the MOOC through updates; remixing refers to the initial connections made by the learners such as through blogging, liking, favouring or bookmarking; repurposing is when learners make sense of the connections by creating their own internal connections, while feeding forward involves learners sharing their connections with others on their networks.

5.4. Digital Pedagogies for the Digital Age

Pedagogy that was appropriate for the time when access to knowledge was scarce is called “pedagogy of scarcity” (Weller, 2011). According to Weller (2011), the pedagogy of scarcity that is based on the “one to many” model which was designed to take advantage of the rare resources (learning content and experts). As such it adopts instructivist pedagogies such as lecturers to convey scarce learning content. However in the era of abundant access to learning content and knowledge experts through digital technologies, there is a need for a new pedagogy, the “pedagogy of abundance”.

Weller (2011) states that the pedagogy of abundance is based on the assumptions that content is free, abundant, varied and user generated; sharing is free and social-based, facilitated by light connections that do not require a lot to maintain. This pedagogy demands a different focus for education and requires the teaching of digital and learning skills rather than knowledge recall. One such is skill is meta-cognitive processes that learners need in processing digital content, what is called curating. This involves “synthesizing, analysing, and prioritising information” (Ungerer, 2016, p. 6), using web tools such as social media, the same sort of skills typically used when learning in MOOCs.

However, is this the reality regarding MOOCs? Using the Teaching Approach Framework that categorises teaching approaches based of the epistemological dimensions of objectivism and constructivism, a study by Toven-Lindsey, Rhoads and Lozano (2015) found that the majority of MOOCs used an objectivist and individual approach focusing on the “transmission of knowledge, instructional sequence and individual mastery” (p. 5). This approach was reinforced through the use of “recorded lectures, textbooks, multiple-choice and single answer assessments” (Toven-Lindsey, Rhoads & Lozano, 2015, p. 6). This finding does not surprise as it is simply a mirror reflection of the traditional face-to-face and online approaches. Given that MOOCs are developed by educators from the very institutions that tend to stick to traditions and familiar practices, this can be expected. However one must emphasise that there are MOOCs that are most likely to be objectivist and those that are less likely to be so, as the next section illustrates.

Anatomy of MOOCs

In this section MOOCs are explored by offering various definitions from literature, discussing their different categories and describing their strengths and weaknesses in an attempt to offer a balanced representation thereof.

6.1. Defining MOOCs

MOOCs have been variably defined reflecting the varying theoretical positions the authors assume in the view of the MOOC phenomenon. Kesim and Altinpulluk (2015, p. 16) define MOOCs as “platforms that are open, free to enroll in, have open curriculums, and can integrate with social networks”. A more comprehensive definition that is preferred by this paper is offered by Cormier and Gillis (as cited in Toven-Lindsey, Rhoads & Lozano, 2015) who define a MOOC as “an online course that engages students in the learning process, offers a way for students to connect and collaborate, and provides a platform where course materials are shared and negotiated among participants” (p. 2).
Another way to conceptualise the identity of MOOCs is through their key characteristics, namely that they are open, participatory and distributed. According to Baturay (2015, p. 428), open refers to the fact that participation on MOOCs is virtually open to any person with Internet access; participatory signifies the nature of learning in that it takes place through the creation and sharing as well as reciprocal interaction with others’ contributions; while distributed describes the social and networked nature of the learning environment where learners interact with both learning content and with each other.

6.2. Types of MOOCs

MOOCs fall into 3 categories, namely cMOOCs, task-based MOOCs and xMOOCs. cMOOCs (or network-based MOOCs) “are the original MOOCs” whose “goal is not so much content and skills acquisition, but conversation, socially constructed knowledge, and exposure to the milieu of learning on the open web using distributed means” using a connectivist pedagogy (Lane, 2012). The original cMOOCs aimed at widening access to higher education for increased participation. It was premised on the notion that knowledge is readily available on the web and learning occurs “through the connections made among learners and learning objects” (Yeager, Hurley-Dasgupta & Bliss, 2013, p. 134).

The second is the task-based MOOCs which “emphasise skills in the sense that they ask the learner to complete certain types of work” (Lane, 2012). Learning is guided by a syllabus accompanied by prescribed materials, and the goal is task completion. Because task-based MOOCs tend to attract a smaller number of participants who usually share a profession, they are sometimes called SMOOC – “Small-to-Medium” instead of “Massive”. Both networked and task based MOOCs are a challenge for the application of traditional assessment methods, relying rather on forms of peer and self-assessment such as discussions, comments and reflections.

The third type of MOOC, the content-based or xMOOC are the most popular type “with huge enrolments, commercial prospects, big university professors, automated testing” focusing on content acquisition rather than networking or task completion (Lane, 2012). xMOOCs tend to be instructivist using mainly video lectures accompanied by formative and summative assessment. This type of MOOC is popular with universities as their pedagogy resonates with established behaviourist approaches that are traditionally used in universities. The instructivist pedagogy accompanied by automation is also necessitated by the need to meet the demands of massive enrolments of course participants.

6.3. Benefits and Limitations of MOOCs

The benefits of MOOCs for educational institutions include enhancing institutional visibility and promoting student recruitment, enabling institutions to try out new innovations and offer cross-disciplinary courses, expanding access to higher education, enabling educators to experiment with new pedagogies while creating communities of practice (Chea, 2016). Offering similar sentiments, UNESCO and Commonwealth of Learning (2016) maintain that MOOCs widen participation in higher education by enabling “people anywhere in the world to acquire high-quality knowledge on demand” (p. 23). This supports the promotion of equality in and democratisation of education, supports the return of investment of tertiary education for societies and reduces educational cost (UNESCO & Commonwealth of Learning, 2016).

In terms of limitations, Chea (2016) suggests that there are two main ones, namely non-“completion rates and the pressure on institutions to reduce costs” (p. 19) due to the high cost of outsourcing the facilitation of courses resulting from the limited ICT expertise of local academic staff. UNESCO and Commonwealth of Learning (2016) add that advantages of MOOCs are that they are not accessible to everyone, and as such, cannot be the only solution for enhancing access to quality education. One challenge from the perspective of educators is that the development of MOOCs is both energy and time consuming (Zhang, 2016). Zhang declares that although offering students credits for completed MOOCs is a motivating factor for higher education students, few educators are positive about the provision of formal course credits to students for completed MOOCs.
Contextualising MOOCs for Namibian Local Needs

In the information age and knowledge based global economy, the flow of information and knowledge production remain asymmetrical, reflecting the entrenched inequalities between the global north and the global south in various sectors, including education provision. Unsurprisingly due to the digital divide between these two regions of the world, the global north is predominantly the producer of knowledge while the global south is principally the consumer of such knowledge.

This scenario has permeated the arena of online education and therefore MOOCs. As such, a lot of the MOOCs available online are created by education providers in Western countries with learning content reflecting the contexts in which and for which it was created. Apart from learning content, the digital context of the countries from where MOOCs originated as well as where they are proliferated i.e. the developed countries, is different from that of developing countries like Namibia. Access to MOOCs is mainly free but one requires Internet access, which is a challenge in developing countries, including Namibia. Therefore the question is, how does one modify MOOCs to suit the Namibian context, both in terms of content and access?

Various options are available. Some MOOC providers declare the learning content generated by course participants as open educational resources (OERs). An example of a MOOC provider that applies this principle is iversity whose terms of use regarding user generated content include its “right to distribute, reproduce, adapt, make available, broadcast and retransmit and to recite, perform and present in public” as well as the right to make available generated content “in any form, and to undertake any adaptations and reproductions that are required and to permit reproductions to other Users” (iversity, 2016).

Therefore one way to contextualise MOOC content is to harvest, adapt and customise it for local contexts, including curricula structures, learning outcomes and learner preferences. The design of most MOOCs enables easy repackaging of content by choosing bits and pieces that are relevant to educators’ local teaching needs. This can be referred to as course supplementation whereby the content of MOOCs is pooled, adapted and repurposed to add value to the course delivery of educators in higher education. Topics of high demand among learners or of greater difficulty can be primed for this purpose.

Another way to repurpose MOOC content is to use annotations on content generated by others on MOOCs. This involves educators adding personal insights onto selected course content such as by providing local examples equivalent to foreign concepts used in the content or adding learning activities flavoured by local curriculum. As far as curricula demands and local standards are concerned, the restructuring of MOOC content to suit the design of local curricula or to meet the educator’s pedagogical approaches and learners’ learning styles is another example.

The models of MOOC contextualisation described above focused on content harvesting and adapting, otherwise called curating. If one shifts the content from content to delivery mechanisms, another challenge and opportunity for contextualisation presents itself, namely digital access and connectivity. Unlike developed countries, Namibia has lower Internet access levels as well as lower quality connectivity. Liyanagunawardena, Williams and Adams (2013) describe the challenge of accessing learning content such as high definition videos that suit participants in developed countries well, while disadvantaging participants in developing countries who may be unable to download videos or to use online video conferencing tools such as Skype or Google Hangout. This picture is not dissimilar to Namibia where poor bandwidth presents similar problems. These challenges require educators using MOOCs to find alternative means of enabling learner access to learning content such as those discussed above.

Another thing that distinguishes Namibia from developed countries is that access to the Internet takes place mainly through mobile devices rather than computers. This scenario demands that contextualisation of MOOCs should involve both fostering access to MOOC learning content offline as well as modifying content for mobile device access. The former is easier as it simply involves downloading content for offline access, but the latter demands more as it requires content to be adjusted for consumption through mobile devices. This can involve
rechunking of content and/or the delivery of such content through mobile applications rather than through browsers.

Notwithstanding the discussion so far, it is also noteworthy to indicate that the “Open” in MOOCs does not always refer to OER, but rather to open registration for anyone with Internet access. Thus unlike the open education movement spearheaded by MIT with their OpenCourseWare, MOOCs are considered to generally have strict copyright terms (Liyanagunawardena, Williams & Adams, 2013). This particularly applies to content-based xMOOCs given their massive reach and commercial orientation. To navigate the MOOC landscape in order to distinguish those which are openly accessible from those that are not demands skill and time from educators and learners alike.

Inter-Institutional Collaboration on Creation of MOOCs

8.1. Rationale for Inter-Institutional Collaboration

The idea of inter-institutional collaboration is a feature of the knowledge economy where educational institutions can respond to modern needs by transforming their roles and modus operandi regarding teaching, research and other key activities. With an economic shift from materials to services and knowledge in knowledge economies, educational institutions are restructuring themselves from generalist institutions into centres of specialised knowledge interconnected by communications technology, where “each knowledge centre develops its own skills in depth around its core competencies and then broadcasts its needs and capabilities to others – combining with them to solve specific problems as required” (Quinn, 2001, p. 32).

According to Quinn, institutional relationships in knowledge economies are characterised by collaboration instead of competition, borne out of “mutual need, common interest, and intellectual respect” (2001, p. 32). The need for collaboration is further necessitated by the proliferation of information communication technologies that have rendered universities as just one of the sources of knowledge rather than being the main source as it was in the past. Quinn (2001) argues that universities have shifted from being centres of knowledge to being “access nodes on the knowledge network” (p. 35). Therefore Quinn suggests the role of education in a web-based world should be redefined from that of providing students with knowledge to that of enhancing their ability to “develop their own valid mental models for analysing situations across disciplines which no one has seen before” (2001, p. 35). This requires educational institutions to break down boundaries and promote openness to truly be nodes on a network that foster student access to knowledge wherever it may be found.

Given the orientation towards and rationale for collaboration for educational institution in knowledge economies, a status that Namibia is ambitiously aspiring to achieve, the pertinent question would be, ‘how can institutions of higher learning in the country (Namibia) collaborate?’ This question and others such as how institutions of higher learning can actually collaborate in the creation and use of MOOCs will be addressed in later sections.

8.2. Models of Inter-Institutional Collaboration

Inter-institutional collaboration in areas of teaching and learning “allows faculty members to specialise in topics they know and enjoy. As a result, students benefit by having a widely read and deeply experienced faculty member in every course they take” (Dow, 2008, p. 176) in the area of open and distance. According to Dow, (2008) collaboration in distance education takes place along a scale from instructional design among a team of a faculty collaborating across institutional boundaries, through class-to-class collaboration in which classes at different institutions work together, to institution-to-institution collaboration in which different institutions work together to offer a complete degree or continuing education programs to students at distant sites (Dow, 2008, p. 171).

There are global examples of inter-institutional collaboration in offering online courses as well as MOOCs. The virtual university is one concept that embodies the notion of inter-institutional collaboration in the delivery of courses using information communication technologies to enhance access to higher education. Supported
by technology, such collaborations can be multi-institutional, multistate and multinational, where collaborating institutions can deliver modules, courses and degrees to individuals and groups of learners who interact with a faculty using both synchronous and asynchronous modes of interaction (Sejzi, Aris & Yahya, 2012).

One good example of an inter-institutional virtual university is in Finland where 21 universities created the Finnish Virtual University (FVU), a consortium and collaborative university network whose aim was to “offer flexible net-based educational services as a joint venture between universities, research institutes and business enterprises” Kylama, 2005, p. 109). Some of the roles of the FVU are that it “develops flexible study opportunities across university boundaries, promotes the shared use of online instruction and educational materials and produces ICT training and support services for shared use” (FVU, 2006). According to the FVU, the Finnish Virtual University supports student mobility by allowing students who are enrolled at one university to study part of the degree courses at another university without cost to the student. Furthermore, the FVU also promotes competence development through the sharing of expertise and research, sensible division of labour, expertise and collaboration (FVU, 2006).

Another example of inter-institutional collaboration is found in Hong Kong where the University Grants Committee (UGC), made up of 8 Hong Kong universities, collaborates on the development of MOOCs. According to Hong (2016), the objectives of the collaborative project was to establish a joint eLearning platform for the sharing of online courses, to use the platform for piloting innovative pedagogies, to foster collaboration among institutions by packaging related courses, to provide a platform for collecting data on students’ learning patterns and perform learning analytics for enhancing the learning experience of students, and to provide a platform for outreach opportunities to post-secondary and secondary school sectors.

8.3. A Framework for Collaboration of Namibian Educational Institutions

There are various ways in which higher education institutions in Namibia can take better advantage of the promise of MOOCs through collaboration. Examples from Finland and Hong Kong discussed above offer guidelines on how course offerings and collaborations could be arranged.

The Finnish model requires higher education institutions to offer credit-bearing online courses individually that they open up to students at sister institutions which are part of the collaboration. These courses would then be OOCs (Open Online Courses) that are not “Massive” as they are not open to just anyone. In order for this to work, higher education institutions in Namibia would need to initiate a credit transfer system that would enable students to transfer credits obtained from a course at one institution to their home institution. A similar system is already in place in Europe where educational institutions from 46 signatory countries that have agreed to the Bologna Process and ascribe to the European Qualification Framework, use the European Credit Transfer and Accumulation System or ECTS to facilitate student “credit accumulation and transfer based on the transparency of learning outcomes and learning processes” (European Communities, 2009, p. 11). ECTS basically describes the workload (the time students typically need to complete all learning activities (such as lectures, seminars, projects, practical work, self-study and examinations) students need in order to achieve expected learning outcomes: what a learner is expected to know, understand and be able to do after successful completion of a process of learning (European Communities, 2009, p. 11). Given the fact that higher education institutions in Namibia are governed by one qualifications framework – the Namibia Qualifications Framework (NQF), it should be easier to formulate a credit transfer policy that can guide student credit transfers.

Another collaboration framework option is to use the UGC model whereby all institutions create a common course platform from which MOOCs would be administered. The UGC is more truly “MOOCish” as courses are opened up to learners not enrolled with universities such as post-secondary and secondary learners. For students’ learning to be credited, this model would still require a credit transfer system to be in place. It may also work best using blended approaches whereby students enrol for the MOOCs offered, while authenticated assessment would take place in controlled face-to-face environments in individual institutions. One advantage that Namibia has is the enabling environment that can facilitate this process. Firstly all higher education
institutions ascribe to one qualification framework which should make it easier to formulate a credit transfer
system. Secondly and most importantly, the country already has a collaboration framework through a body
that coordinates open and distance learning activities of the higher education institutions and other distance
education providers. This body is the Namibian Open Learning Network Trust (NOLNet) whose mandate
includes promoting cooperation between publicly-funded ODL institutions and their equitable sharing of
resources for mutual benefit; developing quality control mechanisms and structures for standard setting in ODL;
collaborating in institutional capacity-building and training of staff, both part-time and fulltime, to provide open
learning services and support to the students of all signatory institutions; ensuring access for the students of all
signatory institutions to the facilities and services of each institution through the establishment and expansion
of a national network of open learning centres; and supporting eLearning initiatives to supplement existing ODL
print-based programmes (Möwes, 2008, p. 3).

It has already been established in this paper that MOOCs fall within open and distance learning. Given the existing
mandate of NOLNet, especially the first point on inter-institutional cooperation, and the last two points on the
sharing of facilities and using eLearning to supplement programmes, the ground in Namibia is ready to initiate
specific structures and policies that would enable higher education institutions and other partners in the country
to collaborate on the provision of MOOCs, using approaches and models that suit the local needs and context.

9. Discussion

This paper has unearthed interesting insights regarding MOOCs and their potential for use in Namibia. In terms
of pedagogy, there are implications for higher education institutions such as the need to address issues like
the digital divide within the country in order to promote equitable access to online learning for all. Of particular
importance is the need to develop 21st century digital literacy in Namibian learners and educators to enable
them to take advantage of MOOCs. Educators can only curate quality content and facilitate online learning
if they have adequate digital skills. There is also a need to support the use of innovative pedagogies using
connectivist learning that come along with MOOCs.

Another thing that should be addressed is the issue of perceptions towards MOOCs, which, if negative, can
negatively affect the adoption of MOOCs by educational institutions in Namibia. A study in Europe by Gaebel,
Kupriyanova, Morais and Colucci (2014) found that many educators (42%) had mixed feelings about MOOCs
while one out of five had limited knowledge about MOOCs, which also influenced their decisions to adopt or
ignore them. This indicates that attitudes towards MOOCs and knowledge about them needs to be a priority in
any strategy to promote the use of MOOCs in Namibia.

When it comes to inter-institutional collaboration, examples of models that can be useful in this regard are
plenty, while the local policy infrastructure is also supportive of collaborative initiatives of this nature. The
way forward would be to choose a collaboration model suitable for local needs and to put in place a specific
operational framework in line with the selected model. At the same time, it is clear that educators have various
ways in which they can contextualise MOOCs, including curating content and repurposing and restructuring it
to fit their own purposes; using blended learning approaches to make use of learning content while designing
their own learning and assessment activities, and to find ways of fostering access to MOOCs through the use
of mobile devices.

9. Conclusion

MOOCs are an emerging technology and approach to the delivery of online learning. The benefits offered by
MOOCs such as fostering access to quality higher education and to quality learning materials for both educators
and students are obvious. At the same time, challenges which exist within the nature of MOOCs are technology
and Internet oriented solutions, being predominantly of Western origin and being less open in terms of the reuse
of learning resources have also been highlighted. However, given the growing access to the Internet in Namibia
and the growing demand for quality higher education, lifelong learning and the challenge faced by educators at
educational institutions to meet the learning demands of the nation, the time is ripe for educational institutions
to take advantage of the wealth of opportunities offered by MOOCs.
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BLENDED LEARNING: HOW ONLINE COURSES IMPROVE OFFLINE LECTURES

Kocher, Haß and Schröder
Tim Kocher, tim.kocher@uni.due.de
Prof. Dr. Ulrike Haß, ulrike.hass@uni-due.de
Prof. Dr. Bernhard Schröder, bernhard.schroeder@uni-due.de
University of Duisburg-Essen, German Linguistics, Essen, Germany

ABSTRACT

This paper presents the development of an eLearning-module which we started in 2014 as an online course, using the moodle-platform, accompanying an introductory course in linguistics and have been refining since. The underlying concept is a blended-learning approach, so the eLearning-module is not designed as a stand-alone solution but to support and enhance the associated lecture while allowing for more flexibility on the part of students. We make use of a broad variety of tools such as digital scripts podcasts, videos and online tests. In a first evaluation, some of these proved to be more successful than others. In order to prepare themselves for an intermediate exam associated with the introductory course – the exam is also computer-based – students benefit especially from taking the online tests. One serious disadvantage which accompanies online learning is the lack of academic discourse with teachers and fellow students. This could be counteracted by implementing and encouraging the use of a discussion board. Overall, the online course is highly accepted among students and proves to be a highly beneficial complement to the associated lecture, as it demonstrably supports students’ self-evaluation and promotes an active involvement with the subject matters.

1. Introduction

The department of German language and literature is one of the biggest at the University of Duisburg-Essen in terms of student-numbers, and is facing numerous challenges to be mastered: Attendance at most seminars had been mandatory for students, while lectures were mostly not compulsory. In October 2014, by federal state law the ministry for innovation, science and research of North Rhine-Westphalia ruled this arrangement unlawful: attending the course is no longer a prerequisite for taking the exam on the course. Since then, the numbers of students who regularly attend the courses have been dropping. We have perceived a significant decline in the result of the exams which we believe to correlate with students’ non-attendance. To counter this trend, on the one hand we strive towards a solution that enables students to master the courses, even if they are unable to attend the lectures physically. On the other hand we want to offer an adaptive learning environment that actively involves students in co-determining the way the lectures turn out, to motivate those who are currently unwilling to attend the lectures.

Our project focuses on the basic course ‘introduction to linguistics’ which is a periodic lecture taking place each term. As is typical for introductory courses, the purpose is to give the students a broad overview of many different topics. Therefore, the students face a variety of texts (scientific literature which they are not used to) on heterogeneous subject matters and, as elementary students, their skills to autonomously compile that successfully are yet to be developed. As a consequence, neither the acquisition of knowledge nor the utilisation of scientific thinking may be outsourced to an online course alone.

2. The Aims

The aforementioned revision of the Higher Education Act seeks to add flexibility to the students’ college education: making courses non-mandatory offers an opportunity for time management that fits specific
The students are free to decide where and when to study, the educational content gets detached from a physical location and a fixed point in time. In this way, diversity is promoted in at least two ways: single parents who have to organise around child care gain more freedom and so do financially weak students who are working to finance their education. On the one hand, this arrangement benefits students who are able to self-organise and learn independently. On the other hand, students who lack this ability might fall behind without being able to address their problems through a scholarly exchange and without a teacher’s guidance. In the law’s commentary it is stressed that the personal responsibility of students should be strengthened and the fact that high school teaching takes place in a community of teachers and learners should be underlined. The ‘community of teachers and learners’ is bigger than one seminar and not bound to a certain hour or room. So in accordance with the aims of the educational policy, open distance learning not only offers the flexibility the students strive for, but also the support they need at times.

We conceptualise the flipped classroom as part of a blended-learning strategy, offering all the information necessary to succeed in the course-related exam online via moodle, accompanied by supplementary learning material. Yet we do not strive to abolish face-to-face-education in lecture halls. The associated moodle-course is designed to serve a range of objectives:

1. To help the students access the different topics anytime, anywhere.
2. To allow for an individually set learning rate: students might access subsequent topics earlier and have full access to prior topics throughout the term.
3. To let the students evaluate their respective learning achievements online and provide immediate feedback.
4. To facilitate processing of the learning material provided online by offering means of knowledge exchange on multiple levels: between students as well as between students and lecturers.
5. To increase the students’ motivation to physically attend the lectures.
6. To help teachers in preparing the lectures in a way that is tailored to the students’ needs.

3. The Methods and Tools

Since 2014, we have been engaged in an eLearning program to improve the studying-experience of our students, combining different blended-learning models, particularly face-to-face-driver, self-blend and flex-models. The basic course ‘introduction to linguistics’ consists of a lecture in its traditional face-to-face approach accompanied by a moodle-course. Each term consists of about 13 -15 lectures, depending on holidays, the exam-schedule etc., the moodle-course is structured respectively (in 13 -15 blocks or modules) and the educational content is preceded by basic information about the lecturer(s), term-schedule, list of topics and general requirements to pass the course.

Figure 1: First two modules of a moodle-course showing date, topic, summary and content
We chose the ‘flipped classroom’-setup, in order to link the lectures to the moodle-content and vice-versa: The
scripts are to be read at home, prior to the respective lecture. They are supplemented by additional learning material, which may serve as an aid in understanding the script in question generally or focus on a selected subject to deepen insight into specific linguistic phenomena. That way we respond equally to the different learning needs of students. The supplementary materials come in different media, e.g. as podcasts, short videos (3-10 minutes), PDF-files or hyperlinks. When offering A/V-material, different platforms/OS are always taken into account.

Figure 2: one module expanded, showing different types of files and activities

3.1. Learning Material: Preparation

The moodle-course makes learning material available throughout the whole term: The texts to be read, mostly scanned chapter(s) from textbooks as PDF-files, are essential and part of each week’s module. In some cases, copyright-regulations prohibit the distribution of more than a certain number of pages of a book. In other cases, a hyperlink to a book is offered and the whole book can be downloaded to the students’ pcs. Optional learning material is offered as podcasts, audio-files up to ten minutes long, often created by advanced students. The podcasts refer to the text, but they not just summarise it: Examples are discussed to help with understanding the topic in question and give insights into related subjects. Usually, the podcasts feature two different speakers, making the exposition feel more vivid, thus enhancing listeners’ attention.

Video-files serving the same purpose are also part of the material offered. Like the podcasts, they usually don’t exceed ten minutes in length and the visual medium allows for covering even more sophisticated examples. Many questions arising from the texts might well be answered by these videos, which consist mostly of commented power-point-presentations. There are usually two different commentators in each video, for the reasons mentioned above. In the summer term 2016, up to nine video-files were added to one week’s topic, deepening insight into a broad range of subjects.

Since the exam is an e-assessment using a platform other than moodle (for legal reasons), we also offer a short video to instruct the students on how to log in to and navigate through the e-assessment-tool named ‘JACK’, which best meets our needs (Kocher, Haß, & Schröder, 2015).

Media-files are offered in different file-formats, to guarantee compatibility with different platforms and operating systems. The majority of today’s smartphones will be able to play these files as well. A few days before the lecture, a preliminary version of the corresponding slides is uploaded to moodle. Students
voiced their interest in being able to access these slides prior to the lecture in order to prepare questions and to make notes on a printed version of the slides.

Each module also contains an online test that opens one week ahead of the lecture. Its primary function is to serve as a means of self-evaluation, to help students to review their learning success. It also helps with practising in preparation for the exam, to some extent.

3.2. Online Tests

Reflecting the self-blend-approach, where online tasks complement traditional learning, a short online test (up to 15 questions) is linked to each script, and all the answers can be derived from the related text. Each test closes a few days (and can only be finished) before the related lecture and is corrected and evaluated automatically, making results immediately accessible for both the students and the lecturers. Thus the students can easily assess their learning achievements while practising and the lecturers gain insight on the overall comprehension on the part of the students. This can even be augmented by feedback provided through free-text-surveys available for those students who took the tests. Any questions that remain unclear or arise during the test can be submitted to the lecturer, who then is able to prepare the lecture focusing precisely on those topics that need to be clarified, according to the test-results and feedback. Taking these tests is highly recommended and our evaluation shows that the students appreciate this opportunity as they see it as a way to positively influence the lecture to meet their individual needs. The exam to which this lecture contributes to is also an e-assessment and contains similar tasks, which serves as another incentive to take the tests.

Although the tests are not a formal precondition for taking the exam, we see that the vast majority of students make use of this voluntary exercise. During the latest winter term (2015/16), only 71 out of 650 participants (approximately 11%) did none of the tests, which is usually the case if students subscribe to the moodle-course but later decide to postpone the corresponding lecture and/or exam until next term. An additional 19% took more than one test but less than half of the tests, leaving approximately 70% that took more than half of the tests. Comparing these numbers to the data from the exam, it shows that almost no examinee takes the exam without having taken the tests. The numbers differ slightly for the last summer term (2016): 30% took none of the tests, 19% took at least one but less than half of the tests and 51% took more than half of the tests. This is mostly explained by the fact that other seminars besides our lecture are part of the concluding exam and students might not have attended those, so they are going to take the exam in the subsequent term, which means they postpone the preparatory practice as well.
Tests reopen after the end of term and before the exam for practice reasons. Currently, there are no statistics available of how many students have taken the tests during this rather short time span. But from the requests we received after the tests closed we conclude that the demand stays high.

Besides those text-related tests, there is one final test that serves no other purpose than to introduce the e-assessment tool ‘JACK’. Its GUI differs slightly from moodle, and the vast majority of students have zero experience with it, so they benefit from taking the first steps outside an examination-setting. When looking at if and how taking the tests influences the results of the exam, we are facing mixed findings: The best 20 examinees had scored significantly higher in the test (on average) than the 23 examinees who failed the exam. The difference is even greater when comparing only the ten best examinees with the ten poorest results.

Table 1: average points scored in the optional tests by the 20 best and the 20 weakest examinees, respectively

<table>
<thead>
<tr>
<th>Exam result:</th>
<th>top 20</th>
<th>bottom 20</th>
<th>top 10</th>
<th>bottom 10</th>
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</thead>
<tbody>
<tr>
<td>-points in tests:</td>
<td>69.19</td>
<td>50.94</td>
<td>79.20</td>
<td>41.50</td>
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</tbody>
</table>

But the low scores for the bottom-group are heavily influenced by six participants who did not take any test at all. Taking only those participants who took at least some of the tests into account, the adjusted numbers show an average of 61 points for the remaining 14 examinees who failed the exam. Looking at the individual results we find students who failed the exam, but scored higher in the tests than those who scored best in the exam.

Table 2: Cumulated test results of the TOP 20 (a) and BOTTOM 20 (b)

The difference between these two groups proved to be significant in the Wilcoxon rank sum test with $p = 0.004973$ for $W = 303.5$.

Looking only at the points scored might be inadequate, because of the different test designs some tests allowed for earning more points than others. But looking at how many tests were taken, the findings are similar to the
numbers above. There are examinees with poor exam results who took as many tests or even more than those who were among the best results. Trying to analyse a possible correlation between test- and exam results is difficult due to the fact that many students take the exam at least one term after taking the tests, because they have to take two more seminars in preparation of the exam. It might be the case that students achieve good scores in the tests mid-term, but then take the exam at the end of the subsequent term. And even though the tests get re-opened for students before the exam, we do not have statistics for this period at the moment, as mentioned above. Spending too much time between tests and exam might definitely weaken the positive effects of both practice and self-evaluation.

It seems plausible to assume a relation between taking the tests and learning success, but it is yet to be perceived in which direction. Scoring low on tests might – and should – act as an alarm bell and direct the student to further investigate the related text, take a look at the associated a/v-material and/or use the discussion board to seek assistance from their fellow students. Therefore, the crucial factor might not be the points earned in the tests, but the conclusions students derive from their results.

It is safe to say that students perceive the tests as important for their preparation regarding the exam: the vast majority of those who took the exam did at least one or more tests while of those who did no tests, almost nobody participated in the exam. An evaluation from our winter term course, carried out by our university’s centre for higher education development, supports our belief: 66% of students who took the survey rated the online tests ‘very helpful’, 20% rated ‘rather helpful’. The remaining 14% found the tests to be at least ‘partly helpful’. The ratings ‘rather not helpful’ and ‘not helpful’ were not given at all, making the tests the top-rated feature; followed by the digital scripts. When asked about the features future courses should focus on, the online tests had the highest approval ratings, followed by digital scripts in a close second place.

Table 3: approval rating of selected online tools in % (N = 56)

<table>
<thead>
<tr>
<th>Tool</th>
<th>AVERAGE</th>
<th>MEDIAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>tests</td>
<td>428.7</td>
<td>593.5</td>
</tr>
<tr>
<td>digital scripts (texts without slides)</td>
<td>244.3</td>
<td>484</td>
</tr>
<tr>
<td>videos</td>
<td>207.2</td>
<td>64</td>
</tr>
</tbody>
</table>

Table 4: clickcount for most favoured features, excluding discussion board (winter term 2015/16)
3.3. Learning Material: Follow-up

The Power-Point-slides presented during the lectures are revised afterwards if necessary, taking the students’ input into account, and they are then uploaded to the moodle-course, replacing the preliminary version. In this way, we aim for achieving two important aspects: students are able to look up the lectured topic at home, either to repeat the subject matter, or in case they did not attend the lecture for any reason. Slides are presented as uncommented PDF-files, while crucial subjects of each lecture are available as video-files, showing the slides and the lecturer’s video-capture from the presentation. User statistics from previous terms indicate that shorter videos are favoured over longer ones. When we offered the entire lecture recording, it was hardly looked at. In addition to the other learning material, this resembles a flex-model, where the curriculum is completely available online and teachers are available for support, either during the lecture or via online support.

3.4. Discussion Board

We make use of two different message-boards. One is mainly used to communicate organisational matters from the staff towards the students, the other is virtually the heart of our online course: a discussion board, where students can participate anonymously and discuss questions that often transcend the curriculum of the course. We realised that elementary students show a high level of hesitation when it comes to publically asking comprehension questions. This is where preparation and post-processing meet, and we strongly encourage students to discuss these topics among themselves. Only in rare cases when a case remains unsolved or the discussion is derailed does one staff-member join in with his/her clear name. In the winter term 2015/16, there were 184 threads in total, containing 430 entries. 36 threads (~19.6%) dealt with organisational questions regarding the exam (e.g. which date, what time, which room). 38 threads (~20.7%) were about general organisational questions and 110 (~59.7%) brought up content-related discussions. In one case, an organisational question turned into a discussion of bad punctuation, thus giving a very naturalistic example of implementing orthographic rules. When it comes to comprehension questions, teachers try to let the students figure it out by discussing it among themselves. In cases of a teachers’ assistance being inevitable, we still aim for helping the students come to their own conclusion rather than just presenting the answer. This can be achieved by giving and discussing an example analogous to the case in question, or by just referring the rephrased question back to the student(s), thereby hinting at a possible solution. In this way fellow students sometimes are prompted to join the discussion and provide an answer.

There has been an ongoing debate among colleagues, whether anonymity actually promotes lively communication or crude language and undesirable behaviour. Our experience with three terms of anonymous message boards shows that the general tone is predominantly respectful, both towards the teachers and among students. There have been rare exceptions in the past, which were quickly resolved by the students. It was only when our first e-exam had to be repeated due to technical issues in 2015 that the teachers had to react to some rather angry posts.

Student ratings are predominantly positive: in the aforementioned survey, 64% fully agree that ‘exchange of information and knowledge via email, chat and forum’ worked well. 23% rather agree, 14% agree partly and 4% rather disagree. The remaining 14% stayed undecided. Asked if teachers responded quickly online, 48% of students fully agree, 39% rather agree. 8% agree partly and respectively 2% rather disagree, disagree and are undecided. Looking at the clickcount, it shows that the anonymous discussion board received more attention (564) than the message board which the teachers used to make announcements (452).

In summary, it can be said that the observed advantages clearly outweigh the possible risks, since by these means, we are able to intertwine traditional lecture and eLearning to reinforce their respective advantages for the benefits of both the students and the lecturers.
4. Conclusion and Outlook

In general, the different tools and learning materials offered online via moodle do intertwine and complement each other: the tests encourage a more thorough reading of the respective texts, understanding the texts is facilitated by the supplementary material given in audio-/video-files. The results of the tests and the associated feedback-surveys helps the lecturer in preparing the lecture, while making the preliminary slides available before the lecture assists the students' preparations. The tests are considered as a suitable tool for evaluating one’s learning achievements and to practise for the exam. They raise awareness of knowledge gaps and motivate students to fix these.

The discussion board bolsters academic discussion, a pivotal element of university education. The high number of students renders individual communication, typically a strength of offline-seminars and lectures, nearly impossible. The online forum manages to remedy this condition. Students contribute to it and the posts are accessed in great numbers. Activity is at its heights at mid-term, but also at the end of the term, as the exam gets closer and when a test is about to close.

The correlation between exam results and tests have to be examined further, as well as the correlation between exam results and usage of other online material: access to audio-/video-files, repeated access to texts and slides.

In summary, it can be stated that the online course in its current form is highly appreciated by the students and that it benefits both learners and teachers. In order to develop it further, additional evaluation is absolutely necessary.

References


ODL AND TECHNOLOGY THAT COULD ENHANCE SUSTAINABLE DEVELOPMENT

Dr. Lekopanye Tladi
Centre for Instructional Technology
Botswana College of Distance and Open Learning
Email: ltladi@staff.bocodol.ac.bw

ABSTRACT

The 21st Century has seen a tremendous transformation in the education space with the introduction of new technologies that bring huge possibilities for enhanced teaching and learning initiatives. Technology has been, and continues to be viewed by many as a potential equaliser as it has been widely suggested that online technologies can help address issues of educational equity and social exclusion, and open up democratic and accessible educational opportunities to all. The discussion is located within diffusion of technology theory of learning (Rogers, 2003) with eLearning defined as a constructivist phenomenon across the digital education arena.

This paper presents an overview of the educational developments in Botswana, through technology-facilitated learning, that aims to facilitate access to education. The paper was a desk study research using literature from various published resources. It is situated within the theory of Diffusion of Technology. The aim was to highlight the potential benefits of utilisation of technology in the delivery of Open and Distance Learning for Lifelong Learning.

The issue is whether, spending money, time, and effort in eLearning initiatives, can bring some socio-economic benefits to developing countries. Can technology-enhanced learning help address the poverty, literacy, social, and political problems in developing countries? (Gulati, 2008). The article focuses on understanding the pedagogy and technology discourse that could enhance sustainable development in the midst of the difficult economic situations which developing nations face.

Introduction

Over the last thirty (30) years, ICT has increasingly been adopted for use in ODL particularly at Tertiary level (Du Vivier 2009). At times ODL might be the only available option for learners to access any form of training due to various social commitments, provided there is a functional ICT infrastructure available and accessible to them. New instructional technologies, if not infused in an appropriate way can hinder access and become an impediment to open learning especially when the target group is not familiar or comfortable with technology. However, it is also important to note that in an attempt to transform teaching and learning, educators in diverse contexts are exploring innovative ways to use web technologies in teaching and learning (An and Williams 2010). Technology mediated teaching and learning in ODL is not only about computers, but is also about using other multimedia technologies available in our day-to-day lives such as TV, Audio and Radio. When utilised properly, these technologies can go a long way in facilitating adult learning, as they are more familiar and user friendly to adults (Tladi, 2003), therefore can easily facilitate lifelong learning for sustainable development.

Theoretical Framework

Adoption of any new technological innovation by any organisation or social system such as academic institutions, is governed by the theory of Diffusion of Innovations by Rogers (1962). According to Rogers, there are 5 categories of adopters for any new technological innovation in any environment, characterised by: innovators, early adopters, early majority, late majority, and laggards.
innovators – more risk-oriented, ready to explore any new innovation.
- early adopters – will take up an opportunity and risk but with a bit of caution.
- early majority – conservative but open to new ideas and innovations.
- late majority – more conservative and less adoptive to new innovations.
- laggards – very conservative, resistant to change. Need a lot of convincing.

Newhouse (2002) says, “Educational technology should influence educational outcomes and costs. Therefore we need to ask ourselves how these technologies are going to help us produce better results (the output). Therefore any social system is affected by this theory and the inherent factors that influence diffusion and adoption of new innovations. Whenever we consider introducing new ODL technologies, we need to be mindful of the fact that, if not infused in an appropriate way, present potential risk of introducing new barriers to participation and learning, especially in developing countries where access to technology is still inadequate. This can actually hinder instead of facilitating access and become an impediment to open learning.

What is Open and Distance Learning (ODL)
There is no single definition of open and distance learning. Most definitions, however, pay attention to some of the following characteristics:
- separation of teacher and learner in time or place, or in both time and place;
- institutional accreditation; that is, learning is accredited or certified by some institution or agency.
- use of mixed-media courseware, including print, radio, and television broadcasts, video and audio cassettes, computer-based learning, and telecommunications.
- two-way communication allows learners and tutors to interact as distinguished from the passive receipt of broadcast signals. Communication can be synchronous or asynchronous;
- face-to-face meetings for tutorials, learner–learner interaction, library study (source)

Use of Technology in ODL for Lifelong Learning
There is no doubt that technological evolution itself has a role to play as far as eLearning developments and ICT uptake in general are concerned. Over the last thirty (30) years, computers and other ICTs have increasingly been adopted for use in Open and Distance Learning (ODL) programmes particularly at Tertiary level (Du Vivier 2009). ODL is a mode of delivery commonly used by out of school youth and adults to undertake learning as they strive to improve their qualifications and also acquire new skills as a way of improving their lives (Naidu, 2006).
In most developing countries, especially in the rural areas, this at times might be the only available option for learners to access any form of training as they normally would have very little or no time to attend school due to various social commitments, provided there is a functional ICT infrastructure available and accessible to them.

Rena (2008) argues that there is a need to establish some basic understanding of the mechanisms of implementing ICT and its role in improving the lives of the society. This would require focusing on issues relating to the environment within which a community exists, local circumstances surrounding them and their differences in culture. Istrate (2009) concurs with this viewpoint by stating that effective learning comes from using ICT to broaden educational opportunities and help students to attain the level of development they and their countries need in order to thrive in the 21st Century. Employers nowadays have voiced concerns, in many forums, with the apparent mismatch of skills of graduates of the education system with what the industry wants. This is the greatest challenge with which Botswana is struggling, to ensure that the quality of education and the products coming out of it, have the necessary knowledge and skills to become productive in the various sectors of employment. This is the key to future economic growth and sustainable development, and Botswana is certainly no exception to this need.

According to Wardca (2004) ODL technologies have given birth to delivery of learning, training or education through electronic means including digital collaboration and satellite broadcasting. An and Williams (2010) also concur that educators in diverse contexts are exploring innovative ways to use web technologies. These technologies can be divided into two main categories. The old traditional technologies which speak to technologies such as Radio, Audio and video teaching but are however still effective and functional in most developing countries in disseminating information, especially on issues of health and farming. They have been effective as lifelong training tools in many societies for sustainable development by empowering people with the necessary knowledge and survival skills on a various issues of life. On the other side, technologies like tele- and video conferencing, computerised-learning on-line and mobile tools are new technologies rapidly invading the education space. This new way of facilitating and supporting teaching and learning is referred to as technology-mediated instruction. The term technology-mediated/based education refers to systems of teaching and learning in which a technology other than print has a major role.

**ODL Technology Use in Botswana**

In the case of Botswana, the government has embarked on a drive to go beyond reduction of poverty and has shifted its focus towards poverty eradication using ICTs as one of its efforts towards achieving the millennium development goals (MGDs). Projects such as Nteletsa, Sesigo, Kitsong and schools computerisation are just a few that have been implemented by the government towards promoting technology usage by all. (Republic of Botswana At a National level, Botswana has taken significant strides in providing an enabling environment through the provision of relevant policies and technological infrastructural developments as reflected in Maitlamo ICT policy, Thuto-Net and the establishment of eEducation committees to steer eLearning development and implementation throughout the entire education sector. Taking advantage of these ICT resources would benefit all Batswana, and help the country drive forward national service delivery standards towards achieving its goal of an improved quality of life for all its citizens. This is also in line with the goal of achieving ‘an Educated and Informed Nation’ as enshrined in the national Long Term Vision of Botswana, Vision 2016 – “Towards Prosperity for All”.

However, the implementation process in accordance with literature in the diffusion of innovations is seen to be lagging behind as demonstrated by several studies conducted especially at the University of Botswana. Studies of diffusion of innovations within educational institutions suggest that it is never smooth to implement change, and that the path is always full of dilemmas and uncertainties (Uys, Nleya, & Molelu, 2004). According to Du Vivier (2011), this may be because adoption of technologies in education comes with different adoption cycles bringing along different challenges. In Botswana, adoption and utilisation of technologies in education continues to be undertaken by various institutions, though in an uncoordinated manner as there is currently no national strategy to guide implementation. To this end various institutions have taken different approaches to technology utilisation, with University of Botswana (UB) and BOCODOL being among some of the early adopters. However,
the few studies conducted, mainly at UB, (Butane & Mafote, 2007; Ndume, Tilya & Twaakyondo, 2008) do not adequately articulate the discrete issues and challenges regarding the factors that influence technology uptake at tertiary level. Most of them mainly focused on performance of specific groups in response to eLearning implementation.

At an institutional level, Botswana College of Distance and Open Learning has done a lot to take advantage of the use of technology in the delivery of its programmes and services towards cost efficient and sustainable human resource development in Botswana. The College started its technology integration initiatives in 2004 using the Moodle Learner/Content Management System. Over the years it has continued to embark on various different technology driven projects as way of supporting teaching and learning activities. In 2006, BOCODOL Gaborone Region, introduced the use of email for a group of Diploma learners to submit assignments online instead of having to undertake frequent visits to the Study Centres (SCs). An email address was set up for learners to submit their assignments to the college. This initiative was taken up well by learners and the college is currently exploring the possibility of extending it to other regions on a pilot basis. Having realized the need for a specific officer to take responsibility for eLearning initiatives, the College then recruited a Technical Officer (TO) for eLearning during October 2008.

In 2009, BOCODOL undertook another pilot project on the use of mobile technologies using Short Messages Service (SMS) to disseminate information to learners with a group of Small Scale Business Management (SSBM) learners. An evaluation survey was conducted on the project and the results of the pilot indicated that 51.7% of the learners rated the service good and above, 23.6% rated it average, only 15.9% rated it poor, with about 8.8% respondents missing. This shows that a significant majority of learners were happy with the service. (72.9%) of the learners found the service to be useful, only 18% reported that they did not find it useful, with 9.1% of responses missing. The pilot results also indicated that the majority (90.8%) of learners wanted the service to be continued, with only 3.6% reporting against. About 91.8% of the learners wanted the service extended to other programmes with only 4.1% reporting that it should not. Overall, there was overwhelming evidence that this service was of great value not only to learners, but the entire institution, and that it should be extended to include more programmes and services. The results indicate that more than 90% of the group that participated in the pilot project fall within the category of early adopters, with only less than 3% laggards. Following the success of the pilot project, the College took a decision to expand the use of SMS to also include areas outside academic support services such as financial services as this would enable the College to send reminders to students on the status of their accounts.

In the area of course development, the College developed an Online Learner Support Module (OLSM) to offer learners guidance and counselling services covering how to study through the distance Learning mode. One of the major positive achievements of the Moodle project is that to date, BOCODOL has been able to start the delivery and support of the Certificate for Distance Education Practitioners (CDEP) to a number of learners across the Southern African Development Community (SADC) region including Botswana, Mozambique and Democratic Republic of Congo (DRC) thus transcending boundaries.

Other projects using technology in which the College has been actively involved and participating are in the area of Open Education Resources (OER). Some of the projects include:

1. Development of the Virtual University for Small States of the Commonwealth (VUSSC) Bachelor in Business and Entrepreneurship (BBE) course development and delivery.

2. The Open Schooling OER project which was funded by the William and Flora Hewlett Foundation / Commonwealth of Learning (COL), with the aim “to broaden access to secondary education through the development of high quality ODL self-study materials”

The advantage of OER is that they do not only contribute to reducing the cost of material development, but also affect the quality of education as these materials are produced following a rigorous schedule of quality assurance checks through peer reviews and expert editing by content specialists involved in the collaborative work. OERs have become a logical choice, largely because they are: readily available, cost effective, and save on time, which would otherwise be expended on developing materials from scratch.
Since 2009, the College has been involved in the Pan-African e-Network Project as a Learning Centre. This is a joint initiative of the Government of India and the African Union funded by the Government of India at a cost of US$116 Million. Its aim was to impart tele-education to 10,000 students of African countries participating in the project, using modern information communication technologies, to help them with their Human Resource Development for global competitiveness. The programmes offered through this online platform came across the different levels starting from Certificate up to Master’s level. They covered a variety of specialist areas in the field of Management, Business Finance, Information Technology and many others from different Universities in India. This project has helped many Batswana attain knowledge and skills in the various programmes and has greatly contributed to the National Human Resource Development strategy.

Finally, BOCODOL, together with some other countries in the Region, is working on a collaborative project with an international organisation called Global Notesmaster Inc. in the UK, to develop an eLearning platform called Notesmaster Botswana. The aim is to build a global eLearning network to support Open schools with a platform to facilitate free, open access and sharing of resources using the Creative Commons Licensing concept. The project was launched in Botswana in 2014 and content development is in progress with plans to roll out the eLearning platform to schools early in 2017.

It would be important to mention the success of the initiatives, challenges and opportunities experienced by BOCODOL that can serve as a lesson to others. You need to indicate the effects of diffusion theory on the process of BOCODOL in using ICT.

**Conclusion**

In conclusion, it is worth mentioning that one of the biggest pitfalls of eLearning development is letting technology drive the programmes instead of the programmes driving the technology serving the role of enabler. To resolve such a scenario, it is therefore important to determine what the technological needs of a programme are, and then finding the best technology to meet those needs so as to enrich the content for the benefit of the learners. While all the technologies needed to facilitate the delivery of training through eLearning might be easily available, the big challenge has always been to ensure that users are familiar with those technologies, and that they are acceptable to the different age groups to ensure success with the training initiatives in ODL. Institutions should also take advantage of older (archaic) technologies as well to support the new ones so as to create a conducive and enabling learning environment for all.

In the case of Botswana, the government has embarked on a drive to go beyond reduction of poverty and has shifted its focus towards poverty eradication using ICTs as one of its efforts towards achieving the millennium development goals (MDGs). Projects such as Nteletsa, Sesigo, Kitsong and schools computerisation are just a few that have been implemented by government towards promoting technology usage by all. It would be to the advantage of all Batswana, if eLearning could be enhanced to help the country drive forward this initiative by making technology accessible to all for purposes of teaching and learning as well as national service delivery towards achieving its goal of an improved quality of life. This would also be in line with the goal of achieving “an Educated and Informed Nation” as enshrined in the national long term vision of Botswana, Vision 2016 – “Towards Prosperity for All”.

BOCODOL has proved to be an innovative institution regarding the integration of ICTs as a delivery mode, as indicated in its 2009-12 and 2012-16 Strategic Plans, which emphasise the need for the College to harness technology. One of the values of the College which is reflected in the 2012-16 strategic document was “Technology is our Engine of Success” (BOCODOL 2012-16 Strategic Plan, 2012). This commitment has been realised by the number of ICT related projects initiatives mentioned earlier. This trend continues to grow with new initiatives being embarked upon such as the COL sponsored integration of ICTs project being undertaken by the School of Education. Unlike the time when the institution was merely a distance education unit of the then Department of Non-formal Education in the Ministry of Education, its current status as a para-statal institution has transformed much regarding the use of ICTs as used in ODL. Its background bears testimony to what can be done, what has been done, and what should continue to be done in projecting the significance of open eLearning individually, and through collaboration, and also through the development and use of Open...
Educational Resources. In particular, this realisation is manifested in practical terms at both pedagogical and andragogical levels in the open and distance learning environment within the institution. At a National level, Botswana has taken significant strides in providing an enabling environment through the provision of relevant policies and technological infrastructural developments as reflected in Maitlamo ICT policy, Thuto-Net and the establishment of eEducation committees to steer eLearning development and implementation throughout the entire education sector. However, the implementation process in accordance with literature in the diffusion of innovations is seen to be lagging behind as demonstrated by several studies conducted especially at the University of Botswana.

Recommendations
We should, where possible, make use of those technologies that are familiar and acceptable to the different age groups to ensure success with training initiatives.

- It is important to determine what the technological needs of facilitating teaching and learning are, and then finding the best technology to meet those needs so as to enrich the content for the benefit of the learner.
- Ensure that users are familiar with those technologies, and that they are acceptable to the different age groups to ensure success with training initiatives.
- Where necessary, provide adequate training for users and support staff to ensure availability of the necessary implementation of requisite technical knowledge and skills.
- Institutions should also take advantage of older technologies as well to support the new ones so as to create a conducive and enabling learning environment for all.

When choosing Media or Technology to use, it is very important to consider the following:

- User Profile - Learner and Staff (Age, skill, environment)
- Usefulness – Fit for Purpose, Acceptability, Usability
- Appropriateness, accessibility and effectiveness
- Cost in terms of production, delivery and learner access (availability, affordability).

References


UTILISING ICT TO OPTIMISE TEACHING AND LEARNING IN THE BACHELOR OF PHARMACY

Jennie Lates, Lecturer: School of Pharmacy, UNAM
Dan Kibuule, Lecturer: School of Pharmacy (SoP), UNAM
Nchindo Mbukusa, Senior Lecturer: Lifelong Learning and Continuing Education, UNAM

ABSTRACT
The Bachelor of Pharmacy Honours Degree had its first intake of students in 2011. As the first ever pharmacy degree programme to be run in Namibia it faces on-going challenges of a shortage of academic staff. The majority of the staff members have limited experience in use of ICT systems in teaching and learning. The school has a staff complement of 20 full time staff that support four programmes – Bachelor in Pharmacy, Diploma in Pharmacy, Master of Pharmacy (Clinical) and Postgraduate Diploma in Higher Education. The use of ICT would be ideal in optimising the limited workforce and delivering teaching and enhancing learning in an efficient manner.

With UNAM’s adoption of the learning management system Moodle, the School saw an opportunity to improve efficiencies in running its courses. An introductory training for interested SoP staff members was provided by UNAM’s Centre for Open, Distance and eLearning (CODeL) to improve teaching and learning. Unfortunately the utilisation and effectiveness of the Moodle eLearning platform has not been evaluated.

We evaluated the utilisation of the Moodle eLearning system using a QUAL-quan research methodology. This study is based on experiences with the use of Moodle platform in three modules. A total of 93 students; 34 fourth year students on the Pharmacy Management module, 32 third year students for their Industrial Pharmacy Placement and 27 second year students for their Rural Placement were included in this study. Students were purposively sampled and their experiences with Moodle were evaluated using in-depth interviews.

We found a high acceptability of the use of ICT among the students. ICT platforms help in the administration of modules including timely provision of feedback to students. The plagiarism checks encourage students to carry out self-directed study and help students to own their work. However students and staff member should be inducted on the use of platforms. The constraints which were experienced and the mechanisms used to get around the problems are also discussed. The authors recommend the furtherance of Moodle in adult learning across the University of Namibia.

Key words: Moodle, ICT, Pharmacy education, UNAM

1. Introduction
The digital revolution has been proceeding at a rapid pace for the last two decades in most regions of the world, leading to significant changes in many different areas of day to day life. Educational institutions have not been excluded from this digital revolution; in fact the first “teaching machine” was invented in 1924 by Sidney Pressey, and the first Learning Management System (LMS) was developed by The University of Illinois in 1960. Naturally LMS has changed greatly since those days, and been revolutionised following the launch of the World Wide Web in 1982 and further again by the introduction of “cloud-based computing”.

What is a Learning Management System? An LMS is a system that provides eLearning materials and tests for students or workplaces. An LMS can perform a variety of eLearning tasks including, but not limited to; providing study materials to students, enabling chat between students and instructors as well as administering assessments and recording scores. LMS have been in use in some universities for more than 15 years, and in some western countries are almost universally used (Dahlstrom, Brooks, Bischel, 2014).
In contrast to the global prevalence of LMS in tertiary education institutions, The University of Namibia (UNAM) adopted Moodle as its LMS in 2015. The use of Moodle, an open-source LMS that is customised to meet the needs of the institution, is being encouraged across the university. One of the benefits of introducing an LMS later than other institutions is that UNAM can learn from the experiences of these other institutions. From the literature available it is clear that both students and faculty prefer to use basic features of an LMS with the more advanced features being used by few students or faculties.

It would seem that introducing an LMS at a time when the majority of students have high digital literacy is beneficial, but some studies have found that the digital literacy of students from using smart phones and tablets does not necessarily transfer to an LMS. Therefore when training is being provided on an LMS, students should be included.

A study of more than 17 000 faculties in 151 institutions in the US in 2014 found that 80% of faculties found LMS useful (Dahlstrom et al, 2014). However in the same report it was shown that students’ satisfaction with the LMS was only 68% and varied widely by discipline, with only 48% of engineering students being satisfied compared to 97% of computer science students.

It is interesting to note that although some areas of LMS have been extensively studied, the use of online evaluation of students has not been well explored (Novo-Corti, Varela-Candamio, Ramil Diaz, 2013). With the growing trends of eLearning and work based programmes, it would appear to be one LMS function that could be highly beneficial.

The UNAM Bachelor of Pharmacy Honours Degree had its first intake of students in 2011. As the first ever pharmacy degree course to be run in Namibia, and due to Namibia’s chronic shortage of pharmacists, there have been on-going challenges with shortages of lecturing staff. Currently the school has 20 full time staff to run the four courses that the School of Pharmacy (SoP) currently houses – Bachelor of Pharmacy, Diploma in Pharmacy, Master of Pharmacy (Clinical) and Postgraduate Diploma in Higher Education. As a result, all staff have workloads that greatly exceed the UNAM recommendations.

With UNAM’s adoption of the learning management system Moodle, the School saw an opportunity to improve efficiencies in running its courses. An introductory training for interested SoP staff members was provided by UNAM’s Centre for Open, Distance and eLearning (CODeL), following which it was left up to individual lecturers to explore the Moodle system and utilise as required for their modules.

With regard to literature on the use of Learning Management Systems in Pharmacy Students, there appears to be a dearth. Two studies have been done on using electronic systems to teach calculations to pharmacy students interns (Rutter, Watts, 2010; Bergen et al., 2011). Students in one of these studies found that the immediate feedback from assessments was beneficial (Bergen et al, 2011).

One study in Pharmacy interns showed that the interns using LMS had significant improvements in Knowledge and Practice compared to those who were using traditional training methods who only had significant improvement in practice. (Yeh, et al., 2014)

2. Introduction of Moodle into School of Pharmacy Programmes

Following a half day introduction to Moodle by the Centre for Open, Distance and eLearning (CODeL), interested staff of the School of Pharmacy were left to decide how and when they would start to use Moodle in their teaching. As Moodle allows students and lecturers to communicate remotely, students can upload assignments or take tests on-line; the School of Pharmacy was especially interested in using Moodle for communicating with and assessing students remotely. Towards the end of the first Semester of 2016, SoP started planning how Moodle would be used by the two BPharm classes that would be on placement (BPharm II on Rural Placement and BPharm III on Industrial Placement) in June/July 2016. It was planned that in order to promote learning from the placements the students would be given tasks to complete while on placement.
The assignment for the first week was to create a class glossary of terms that they were encountering in their placement sites. The plan for the remaining weeks of placements was for the students to have a short quiz on moodle each week to keep them focussed on meeting the learning outcomes of the placements. Unfortunately the quizzes during placements did not come to fruition as too many of the students had poor or no access to the internet at their placement sites. As a result, the School instead ran a quiz for each of the two classes as soon as the students returned to campus at the start of the second Semester. Furthermore the students submitted their placement reports on Moodle and the reports were marked on Moodle using a marking rubric that was shared with the students ahead of time.

At the same time the BPharm IV students were introduced to Moodle as it was to be used throughout their Pharmacy Management module. This is a campus based module that consists of lectures and class based activities that cover a wide range of management topics including strategic planning and budgeting, Human Resource Management, marketing and merchandising. Moodle has been used to share information about changes in lecture schedules and to share lecture materials efficiently. It has also been used for submission of students’ assignments and continuous assessment quizzes.

3. Methods
A QUAL-quan research methodology was used in this study to assess the students’ and lecturer’s experiences with Moodle in three modules for 93 Bachelor of Pharmacy students (34 fourth year students on the Pharmacy Management module, 32 third year students for their Industrial Pharmacy Placement and 27 second year students for their Rural Placement). The experiences in this paper are from two perspectives – those of the lecturer running these modules, as well as those of the students.

Purposive sampling was used to select students from the BPharm IV class for in-depth interviews to further explore the benefits and constraints of utilising Moodle. Students from this class were selected as they had experience with a wider range of functions on Moodle. A semi-structured questionnaire was developed to guide the in-depth interviews. The interviews were conducted by the one author that is not from School of Pharmacy – in order to reduce interviewer bias as well as to encourage interviewees to speak more openly about their experiences with Moodle in the Pharmacy Management module.

4. Results
4.1 Lecturer’s experiences
This was the lecturer’s first experience with using any Learning Management System and she learnt by trial and error, exploration of online help guides and consultation with a senior colleague who had used Moodle for some aspects of modules run since July 2015. Despite being ICT literate the lecturer found that many aspects of using Moodle were not intuitive, as such the initial set up of materials on Moodle was quite time-consuming.

The following functions of Moodle were used; glossary, messaging, sharing course materials, submission of assignments, anti-plagiarism software (URKUND), quizzes and review of students Moodle activity reports. From the lecturer’s point of view all functions were found to be beneficial, especially the messaging functions, sharing of course materials, receiving of assignments, receiving of plagiarism reports and running of quizzes. Below we summarise the main benefits.

Messaging function: It is very convenient to be able to send messages to all students in a course or in a group at once. Previously we have been relying on the student reps to distribute information and materials. In most cases the system worked but it was difficult for the Lecturer to know that all students had received a message or resource. With the introduction of Moodle for a module, it was clear that the responsibility lay with the students to check their messages as well as the Moodle platform on a regular basis to keep up to date.

Sharing of Materials: this involved materials related to tasks to be done, lecture presentations, handouts and questionnaires to be filled. Loading the materials on Moodle for all course participants to access was a very time efficient way of sharing materials. The lecturer created a “tab” on the Moodle course for course materials, and the materials were shared promptly after a lecture.
Receiving of Assignments: Assignments can be submitted on Moodle by uploading a file or typing text within a window. It is up to the Lecturer to set the type of upload that the students must do as well as the due date for the assignments and closing date and time for submissions. Initially students were given a deadline of midnight to submit assignments but this lead to students phoning the lecturer in the evening when they had problems with uploading their assignments! One huge benefit of students submitting assignments on Moodle is that all the assignments are automatically filed in one place for the lecturer to access when they come for marking. It also makes it very easy to see which students have not submitted yet. This is in comparison to the old system of receiving either hard copies of assignments or students emailing assignments to the lecturer, both of which take time and effort for the lecturer to receive and file, as well as to track whose has not been received.

Plagiarism reports: Once an assignment is to be submitted on Moodle the lecturer can select for the submission to be checked by URKUND – anti-plagiarism software, and reports are emailed automatically to the lecturer, showing the level of similarity to other students’ reports and to literature available on line. This tool is priceless as it is not possible for the lecturer to do such a check on ALL work submitted in a fast and efficient way without the support of anti-plagiarism software.

Quizzes on Moodle: Of all the functions on Moodle this one is the biggest help, but also takes the longest time to set up properly if you do not use some tricks. Previously the lecturer would run two multiple choice tests on paper during the Pharmacy Management module and there would be no tests for Placement modules. The quiz function on Moodle is very beneficial as it allows the lecturer to have instantaneous results and statistics for the quizzes, while at the same time the chance of students copying from each other is reduced by the fact that both the order of questions and answers can be shuffled.

So what are the negatives of this fabulous Quiz tool? If like most lecturers – you have a bank of questions in MS Word or similar, then copying and pasting these questions – especially multiple choice questions (MCQs) into Moodle can be a very slow process. However there is a slightly complex way of importing such pre-made questions into Moodle that saves a huge amount of time and therefore makes the quiz function beneficial.

4.2 Students’ Experiences
The data that is presented in this section followed a combination of qualitative and quantitative data analysis. The qualitative approach involved gathering together similar statements over the spectrum of in-depth interviews to inform major categories. The quantitative data was derived from coding answers received from the in-depth interviews. A number of questions were posed and similar statements kept on being mentioned.

Background in ICT and understanding of concept of Moodle
All UNAM students have ICT classes in the first year, but only half of the students interviewed responded that they had had any formal IT training; however they all felt that they understood the concept behind using a Learning Management System. Two thirds of the students felt that they had not had enough of an introduction to Moodle at the start of the Pharmacy Management module but none of the students found it hard to use. In fact all of the students expressed that they thought Moodle was beneficial for them and two thirds of them expressed that it saved them time.

Students’ Preferences
“I like chats, the online quizzes and tests that are designed on Moodle”. “There is a time allocation for activities and staying longer on an activity could result in being thrown out. One therefore needs to keep to the time when approaching any activity”.

“The Moodle platform saves time for marking on the side of the lecturer, and gives immediate response to the student”

“There is immediate response to activities that a student conducts on Moodle. One does not have to get frustrated by waiting for so long to get feedback from the lecturer”.

"NOLNET • PROCEEDINGS • 2016"
“Moodle offers flexibility to students”

**Online quizzes and tests**

“This is the most interesting part of Moodle. There are no hassles with online quizzes and tests. We write and immediately see our results.”

“You write and immediately see the graphed answers to the questions. There is also immediate calculation of the CA but quizzes or tests are factual. I like factual answers not long essays that keep on winding until I lose my mind”.

**Devices**

“The laptops that are given by the University are not strong.”

“I use my own iPad which is stronger, rather than depending on the University laptops which break anytime”.

**Access**

“It is easy to access course materials on Moodle. I think it is just the beginning that gave us problems. We are likely to know all the navigations around the platform once we have used it often.”

**Connectivity**

“It is difficult to access the internet both on campus and off campus. It is good that we were given wireless gadgets that we can use to connect to the internet. When you are lucky to connect, it is very slow, particularly when we are many at one place”

**Submission of Assignments**

“Students should be encouraged to submit all assignments via Moodle. Moodle does not allow us to be late because there is a cut off time. The second advantage is that a student may not submit copied work as Moodle with show what has been copied from other sources without proper citation or reference”

**Thoughts on Expanding the use of Moodle**

Whilst exploring what the students felt about expanding the use of Moodle, four of them wanted more activities to be done on Moodle, and the same students also expressed a preference for lectures to be available on Moodle. All students expressed that they would like other lecturers to use Moodle. However in contrast only two out of the six students stated clearly that they thought that the students as a whole are accepting Moodle as a useful tool.

**Students’ Recommendations**

“If only all lecturers used the platform to teach and engage students in all ways of learning, it would be good for students”.

“The world has gone technological and all users should be updated”.

“Live streaming of lectures when students or lecturers are anywhere around the country would do us good. Students could even access recorded lectures that they could access anytime anywhere”

5. Discussion and Recommendations

From the experiences discussed in this paper it is clear that the Bachelor of Pharmacy students and the lecturer involved have found Moodle a beneficial tool. However it is not yet clear if this tool is saving the lecturer time, as was the initial hope, as it takes time for the lecturers to teach themselves how to use the various functions on Moodle efficiently. This finding is supported by the literature on use of LMS which shows that the majority of faculty and students prefer using the basic functions of any LMS over the more complex functions.

Considering that the lecturers who have started using Moodle in the School of Pharmacy are highly motivated and always looking for new ways to improve teaching and learning and that most of the lecturers in the School have not yet adopted Moodle in their courses, it is clear that if UNAM wants Moodle to be adopted throughout
the university more work needs to be done on the following areas;
Training of both staff and students on using Moodle. Without more training, many staff will not start to use this system. Students can also use the system to chat among themselves and to work on group projects but they will not explore these options if they are not fully trained on the system.

Availability of devices for all students and staff. BPharm students are issued with a laptop in Year 1 of the programme but by Year 4 very few of these are functioning efficiently and some of the students in this study struggled with having a suitable device available to access Moodle. If this is the case for students who are provided with a laptop as part of their course, then the availability of suitable devices is likely to be even more of an issue in other faculties where students are not provided with a laptop.

Provision of reliable internet access for all students and staff. As mentioned in this paper, students who were on Rural and Industrial Placements struggled to get internet access and hence the planned use of Moodle while students were on placement had to be dropped. From the in-depth interviews it also became clear that even on campus, internet access is frequently a problem, especially that the speed of internet access is too slow to upload word documents onto Moodle. If that is a problem then UNAM can definitely not consider providing lectures live or recorded on Moodle as the internet speed would not be sufficient.

6. Conclusions
We conclude that the use of ICT through eLearning platforms such as Moodle improves teaching and learning delivery in the Pharmacy programmes and improves management of activities. With regard to improvement of time needed for running a module – it is expected that as the staff become more familiar with the Moodle platform, efficiencies of time will become more obvious.
Students and staff members should however be inducted on the use of such systems. Furthermore the need for students and staff member to have access to functional internet services and tools is paramount. We recommend that before ICT be rolled out to all modules in the BPharmacy, its use should be evaluated further as this study focused on the use of the Moodle platform implemented in pharmacy practice related modules. The benefits and constraints of using Moodle in other areas of Pharmacy teaching and learning, such as Pharmaceutics and Pharmaceutical Chemistry, may be different.

References


OPEN EDUCATIONAL RESOURCES: A CASE FOR NAMCOL

Ms W. Louw
Namibian College of Open Learning
louw@namcol.edu.na

ABSTRACT

Information and communications technologies (ICTs) and Open Educational Resources (OER) have changed the facilitation and delivery of teaching and learning and the way in which content is developed and disseminated. OER refers to teaching, learning, and research materials in any medium that reside in the public domain or have been released under an open licence that permits their free use and, in some instances, re-purposing by others. Open educational resources can include full courses, course materials, modules, textbooks, research articles, videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.

The Namibian College of Open Learning (NAMCOL) realised that to enhance the learning performance of its learners, the development and provision of additional, supportive instructional resources is necessary to meet their diverse needs and learning styles. NAMCOL responded to this realisation by embracing the use of eLearning and open Educational Resources (OER) and consequently honours its mission ‘to provide wider access to quality educational services for our learners and other customers using a variety of open learning methods’.

NAMCOL is the first educational institution in Namibia to provide OER material to be utilised by all secondary school teachers and learners through its free eLearning platform, Notesmaster Namibia. The use and implementation of OERs are guided by the institution’s OER Policy. The objective of this paper is to share NAMCOL’s best practices and challenges using technologies for digital content development and implementation of online OER content on the Notesmaster Namibia platform to enhance teaching and learning.

Keywords: Open educational resources, instructional design, eLearning

Background

The Namibian College of Open Learning (NAMCOL) was established in 1997 by an Act of Parliament and provides educational opportunities to adults and out-of-school youth in Namibia. As an Open and Distance Learning institution, NAMCOL predominantly offers its courses using print-based course material. The College has realised that to enhance the learning performance of its learners, a better understanding and implementation of additional, effective, supportive instructional resources is necessary to meet their diverse needs and learning styles. NAMCOL responded to this realisation by drafting an institutional OER policy embracing and promoting the use of eLearning and Open Educational Resources (OERs) as part of its educational package.

OERs refer to teaching, learning, and research materials in any medium that reside in the public domain or have been released under an open licence that permits their free use and, in some instances, re-purposing by others. OERs can include full courses, course materials, modules, textbooks, research articles, videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge (UNESCO, 2010).

Access to online OERs exposes learners and teachers to ICTs to improve the quality and efficiency of education as advocated in Namibia’s ICT Policy for Education. For this reason NAMCOL concurs that ICTs can deliver instruction in a more efficient and accessible but less expensive way (Olson, Codde, de Maagd, Tarkleson, Sinclair, Yook & Egidio, 2011). The College aligned its objective to create OERs to what Nanayakkara, cited in Karunanayaka & Naidu, 2014, stated as the primary objective of OERs: to address the provision of and access to learning opportunities to those who would not otherwise be able to obtain them.
The journey with Notesmaster

ICTs and OERs have changed the facilitation and delivery of teaching and learning and the way in which content is developed and disseminated (UNISA, 2014). Harry et al. cited in Slameto, (2014) stated that the development of information and communication technology (ICT) has the potential to support the learning revolution, with six key dimensions namely:

1. Connectivity: ease of communication and access to global information;
2. Flexibility: learning can be done anytime and anywhere;
3. Interactivity: the interaction between the learner and the subject matter as well as the learning environment and learning resources that can be done instantly and directly;
4. Collaboration: the use of communication facilities and online discussions to support collaborative learning outside the classroom;
5. Expanding opportunities: eLearning materials that can enrich the learning material and expand materials for direct contact,

These key aspects are important when you choose a Learning Management Systems (LMS) for online learning. The LMS must be designed to include authoring tools for creating interactive content as well as virtual spaces (discussion forums, chats) for online collaboration. The Notesmaster Namibia subscribes to the six key dimensions of Harry et al. The platform provides opportunities for learners, tutors and teachers to interact collaboratively in a virtual learning environment supported by appropriate activities and interactive content. Connectivity should always be provided to ensure access to the learning content.

Creating a successful eLearning system and supportive environment depends on careful planning, design, development, evaluation and implementation in order for it to be meaningful to all stakeholders (Morrison & Khan, 2003). The College however commands limited expertise in eLearning implementation and thus, opted to join the Notesmaster Global Education Network. Notesmaster Global supports NAMCOL in carrying the cost of building, hosting and maintaining the platform. Rendering this support limits NAMCOL’s expenses. The latter only funds the capacitation and development of OER and the implementation thereof. This is how the journey between the Namibian College of Open Learning (NAMCOL) and Notesmaster Global started in 2012.

Notesmaster is a free eLearning platform that facilitates the online creation and presentation of useful and exciting learning material in a structured and supportive environment. The Notesmaster platform is specifically designed to facilitate the development of a global education network for secondary level learners. This is in line with the view expressed by Neil Butcher, 2010, an OER Africa strategist, to have a common online space in which teachers, schools and institutions share the materials they have produced in an effort to ultimately ensure that all the material that learners will need to complete their studies, can successfully be accessed - legally - without any costs of licensing. Through this initiative (Notesmaster Namibia) NAMCOL includes online OER courseware as part of its educational package, and consequently honours its mission ‘to provide wider access to quality educational services for its learners and other customers using a variety of open learning methods’.

Notesmaster Namibia

The Notesmaster Namibia platform is structured on the School Curriculum of the National Institute of Educational Development (NIED), using subject syllabi as a framework for content development thus, providing access to locally authored junior and senior secondary syllabus-specific content. The platform has been preconfigured with digital versions of all syllabi, which brings a standardised approach to developing and organising learning materials. Interactive notes are developed for each learning objective in the digital syllabus. This structure is in line with what Govindasamy (2002) describes as desirable attributes for an eLearning environment. This means that eLearning content must be designed and developed in smaller manageable chunks known as learning objectives (LO).
Figure 1 below illustrates the platform structure.

Furthermore, the platform uses a variety of tools to appropriately facilitate different types of interaction (learner/learner, learner/teacher, and learner/content) and support learning activities. The ‘Workspace’ and ‘Class’ features embedded in the platform offer different tools that foster interaction and collaboration between learner/learner, learner/teacher, and learner/content. Teachers and learners become active creators of content as part of their learning engagement. These features afford teachers the opportunity to monitor their learner’s performance.

This process of empowering teachers is already underway in a number of popular websites such as Engrade, Schoolgy, Fronter, and Edmodo. However, the Notesmaster Namibia initiative differs from those in that it provides a platform that is configured for Namibia by Namibians. Through a collaborative approach, ideas from teachers and learners are regularly infused into platform updates to enhance user experience. This also places the Namibian learner at the heart of the process.

The core vision of Notesmaster Namibia is the creation of educational resources, national in scope and freely accessible. The key objectives are to:

- create a National Repository of locally authored OER content for easy access by secondary school learners and teachers, and
- empower teachers not only to use the materials in their classroom teaching but also to create and share their own digital content into subject hubs
NAMCOL OERs

NAMCOL OERs consist of interactive notes and quizzes created for each subject topic objective in the digital syllabus framework. Interactivity is achieved by the use of interactive media which incorporate images, graphics, videos and audio elements. These resources are developed to add value to the printed material and improve the learning experiences for learners and are referred to as master sets of resources.

Creating a master set of resources is seen as the first step in creating a national repository of locally authored content that is of high quality, relevant and freely accessible to all Namibian teachers and learners. By default, all resources will carry the CC-BY SA 3.0 copyright license and can therefore be used, adapted and shared by teachers and learners. The NAMCOL master sets of resources are designed to create a sustainable multiplier effect, where the community can rework and share resources, thereby contributing to a growing pool of content, tailored to their curriculum. For reasons relating to accuracy and quality, learners cannot create and publish resources openly for the community. They may use the OER material and share it privately with their peers in special subject groups. Teachers on the other hand have the opportunity to draw on a wide range of materials in a variety of formats which can improve the quality of their classroom teaching.

To date NAMCOL is the proud author of interactive content developed in a variety of secondary school subjects for both JSC and NSSCO levels as illustrated in Figure 2 and table 1 below.

Table 1: OER content

Figure 2: content breakdown
Content Development Process

NAMCOL follows a collaborative team approach to digital content development to create a master set of Junior and Senior Secondary OERs. Fostering a collaborative approach is designed to involve teachers, education officers and learners. The experience for the learners is further enhanced with education officers able to access the platform and provide guidance on enriching the materials. The content development team per subject consists of:

- Content developers/peer reviewers: 3-4 subject matter experts
- Language editor
- Instructional designer - This is the responsibility of the subject Programme developers (PDs) assisted by the Programme developer (PD): eLearning
- Quality assuror – This is the responsibility of the PD: eLearning

Development Model Sclater (2009) states that if institutions are to develop sustainable OER initiatives they need to develop models for the production and quality assurance of OERs, licensing them through appropriate mechanisms such as the Creative Commons, and considering how the resources will be discovered and used by learners. NAMCOL OERs by default carry the CC-BY SA 3.0 copyright license and can therefore be used, adapted and shared by teachers and learners. We adopted an adapted ADDIE model, since it is one of the many instructional design models known for its efficiency in learning and teaching. The ADDIE model encompasses the following stages: Analysis, Design, Development, Implementation and Evaluation as illustrated in figure 3. We agree with Alajmi (2009) that the different stages in the model enable our novice course developers to see a more holistic overview of the instructional design process.

Figure 3: ADDIE model
Source: http://educationaltechnology.net/the-addie-model instructional-design/ Employing the adapted ADDIE model in the development of the interactive notes assists developers in instituting a learner-centred approach with well-defined course goals
(Mukendwa & Wentworth, 2014). Table 2 below outlines the model employed at NAMCOL.

**Table 2: NAMCOL content development model**

<table>
<thead>
<tr>
<th>STAGE</th>
<th>PURPOSE</th>
<th>ACTIVITY</th>
<th>DELIVERABLE</th>
</tr>
</thead>
</table>
| Analysis| Task analysis             | · Division of work - Allocate subject themes and topics to the content developers  
· Content developers align the outcomes, content and activities using the revised Bloom’s taxonomy to ensure constructive alignment.                       | Production schedule          |
|         |                            | Learner analysis                                                                                                                                                                                            |                              |
|         | Grade level and learners skills are identified |                                                                                                                                                                                                               |                              |
| Design  | Select instructional strategies to address specific learning objectives | · Select instructional activities and multimedia elements (ICT tools) to support text content  
· Search internet for suitable OER content using the evaluation checklist (see figure 4).                                                  | Storyboard                   |
| Develop | Create notes              | · Transform storyboards into an interactive note on the platform  
· Create audio clips, animations, presentations, images to use in the notes                                                                                                                                   | Share note for peer review   |
|         |                           |                                                                                                                                                                                                               |                              |
|         | Publish the note          | Developers incorporate peer review comments                                                                                                                                                                 | Publish the note             |
| Implement| Training                  | · Introduce platform to developers to get feedback on  
· the usability of the platform  
· interface and possible bugs  
· Notes are published and available under the resources  
· area for learner and teachers to use.  
· Training of learners and teachers on how to:  
· access notes,  
· communicate online with learners and teachers,  
· create study subject groups,  
· create, and complete assignments and  
· submit it online |                              |
Govindasamy, (2002) stated that, in practice the stages in the ADDIE model as shown in Figure 3 and table 2 above are actually iterative. All the functions interact with one another and content development teams will often find themselves moving back and forth repeatedly between the stages. During each stage the course development team provides interactive feedback and asks several questions to ensure that the embedded teaching strategies work which will allow learners to direct themselves through the instruction without the intervention of the teacher. This process also simultaneously allows for formative assessment in each stage of the adapted ADDIE model to ensure the effectiveness of each stage. This back and forth interaction, feedback and questioning, is indicative of continuous quality assurance.

The question of the quality of open educational resources is always pertinent. Teachers and learners need to be able to trust that the material they are receiving on Notesmaster is accurate and correct. Hence, quality is achieved through the implementation of a systematic peer review mechanism to screen content on Notesmaster. For the development of master sets content, the subject team members create, edit and peer review each other’s work using the evaluation checklist illustrated in Figure 4 before publishing the interactive notes. The same checklist is used to evaluate other open educational resources before they are used to create content or link it to the interactive notes.

<table>
<thead>
<tr>
<th>Evaluate Review of notes and interactive activities by content expert, language editor and programme developer</th>
<th>Give peer approvals</th>
</tr>
</thead>
</table>
| • Content experts peer review notes to check for relevance, accuracy and consistency of content and give feedback on the effectiveness of instruction formative assessment Language editor checks vocabulary, language level, grammar and punctuation Programme developers check that notes adhere to instructional design rules, interactivity, licencing and product quality – summative assessment | Evaluation of notes and interactive activities by content expert, language editor and programme developer

### RELEVANCE

Does the information directly address the objective?

### ACCURACY

Is the information clear and understandable?

Are there spelling errors or typos?

Has the material been peer reviewed?

### PRODUCTION QUALITY

Is the information clear and understandable?

Is the layout and interface easy to navigate?

Do the design features enhance learning?

For multimedia resources, is the audio/video/presentation quality high?

### ACCESSIBILITY

Are the resources available in alternative formats (e.g. docs or pdf)

For audio and video, is there a transcript or explanation for what is discussed in the audio/video?
Figure 4: Guide for Evaluating Open Education Resources

The purpose of the checklist is to see if the notes are constructively aligned to the intended learning outcomes, content and assessment to establish how well they support learners in achieving these outcomes. The evaluation process starts when a developer shares a note for peer review and continues until the final approval is given by the PD: eLearning, to publish the note. The systematic peer review mechanism further equips the teachers with tools to take responsibility collectively for the quality of published materials. These subject teachers have the opportunity to review and constructively critique the work of their peers in a discreet environment away from learners.

Capacity Building

To ensure that our course development team is adequately prepared for the course development process, capacity building training takes place prior to the content development process as well as during the pilot implementation phase. The training usually starts by training content developers, teachers and learners on how to register, access and comfortably navigate the platform.

Content developers are trained on how to develop interactive notes according to the adapted ADDIE model since most of them are novice developers. These notes are created using the NAMCOL study guides as basic resource. A key focus of this training is on instructional design principles and the integration of existing OERs and ICTs in the content development process - making use of the millions of videos, images and animations that exist on the web. Furthermore, the training also introduces developers to using Web 2.0 tools, such as Audacity, Photofiltre, Pixton, Wordle and PowerPoint, making content notes more interactive.

Building the capacity of teachers is the key to achieving effective integration and use of technology in the classroom. Teacher training is based on:

- the practical use of ICTs in the classroom with technologies very close to what they already know, for better understanding on how to integrate ICTs effectively in the classroom.
- online collaboration using the Notesmaster OER authoring tools to create resources and how to make use of the existing open educational resources for classroom teaching.

After teachers and learners have successfully registered and are familiar with the online space, they are prompted to meet and greet their peers to gradually create an online community amongst themselves using the build-in 'chat' and 'post' tools on the Notesmaster Namibia platform. Once they arrive, the eLearning coordinator plays host by constantly showing a presence in the online learning environment and acknowledging the presence of all.
To date we have successfully registered and trained 2,143 teachers and learners to use the platform as shown in Figure 5 below. To encourage collaboration, recreation of content and higher order thinking skills, teachers and tutors are encouraged to contribute to the development of learning content on the platform and share it with their peers and learners in classes or group area on the platform. In case teachers want content to be published they would need to follow the same quality assurance processes as the content developers.

**Figure 5: Notesmaster Namibia community**

**Challenges**

In spite of the many benefits that one can experience in online learning, there are also challenges which need to be overcome in order to increase and improve the effectiveness of online learning resources. We experience the following major challenges with the development and implementation of Notesmaster Namibia:

Lack of technical skills in online development by course development teams: Subject teachers are expected to assume the role of content experts, instructional designers, graphic artists and multimedia producers. This role, combined with their limited experience in the use of technology proves to be a big challenge. Some teachers lack basic computer literacy skills and find the process too challenging. This resulted in teachers quitting and a constant reappointment of content development teams. Although training is provided by NAMCOL programme developers, it is not enough to really change the teachers into expert content developers.

Developing interactive notes within the timelines set in the divisional annual plan: Part-time content developers and permanent staff at NAMCOL do the online content development on top of their normal work load. Up to date we have developed much fewer OERs than initially planned. Paul Justice, (nd) cautioned that even if you adopt a simple model such as ADDIE, good eLearning (and good training) takes time to develop and deliver.
Inadequate ICT infrastructure and Internet bandwidth: Gunawardena (2005), cited in Tarus, Gichoya, & Muumbo (2015), points out that for eLearning to succeed in the developing world, it needs the existence of infrastructure, along with connectivity. This is a major challenge for the implementation of the project. NAMCOL strives to provide the necessary resources, but due to the wide spread of its learners across the country, it becomes a serious challenge. Tuition is offered in more than 100 schools in the afternoons and evenings. Many of these schools are either not equipped with IT infrastructure and Internet connectivity or, do not have the capacity to accommodate NAMCOL learners in addition to their own.

A lack of funding for wide-scale implementation of the Notesmaster Namibia platform: NAMCOL is busy seeking support from the private sector and the Ministry of Education, Arts and Culture to be able to introduce the platform nationally for secondary education. Despite the challenges we experience, the course teams continue to make progress although at a much slower pace than what was envisioned when we started the Notesmaster Namibia initiative.

Conclusion

This paper demonstrates how NAMCOL realised the benefits of integrating ICTs and OERs in learning and teaching as well as the importance of eLearning in the future. Notesmaster Namibia is a curriculum based learning platform, with OER content created by NAMCOL that is freely available to all education stakeholders in Namibia to access and share using creative commons licenses. To ensure quality in the online resources, NAMCOL adopted an adapted ADDIE model to guarantee that the instructional design is well suited to ensure effective and efficient delivery of content. In addition to this, appropriate content is designed that meets the learners’ expectations. Furthermore, training was offered to teachers to capacitate them to apply effective design principles appropriately to avoid a repetition of the traditional face-to-face classroom teaching in an online virtual learning environment.

Since we started introducing Notesmaster to our teachers and learners we have encountered two major challenges: inadequate infrastructure and a lack of funding which hampered the successful implementation. Despite these challenges I personally believe and see a progressive future for the implementation of eLearning using Notesmaster in secondary education in Namibia. NAMCOL has sought the support of the Ministry of Education, Arts and Culture (MoEAC) and the private sector to start with the systematic national roll-out of Notesmaster to all secondary schools over the next three years. This national exposure will make Notesmaster accessible to 900 teachers and about 200 000 learners. Furthermore, the following developments will take place to make the platform respond to the needs of our diverse group of learners and teachers:

- A new upgraded platform will be released before the beginning of each year. The NAMCOL development team plays a prominent role in this upgrading process to ensure that the platform subscribes to the six key dimensions required for successful integration of ICTs in education (flexibility, interactivity, collaboration, motivation, expending opportunities and connectivity).
- The cross platform mobile App for the new Notesmaster eLearning platform will be available early next year for both android and IOS users. The App will replicate the site, retaining and simplifying many features for an enhanced mobile experience. Content will be downloadable. Once downloaded, learning materials can be utilised offline which will reduce the amount of data needed compared to when learning materials are accessed online.

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SUB THEME 2: LIFELONG LEARNING THROUGH ODL

Ishmael Magare:
Insights into Values in Action (VIA) Character Strengths of the In-Service Students in the Diploma in Primary Education: An Extract from “An Exploration of Graduates Perceived Competencies in Higher Education by Open and Distance Learning: The case of Botswana”

Bantu L Morolong
Collaboration amongst SADC Distance and Open Learning Institutions: lessons and possibilities for Growth and Sustainability of the enterprise

J. Kavetuna:
Technical and vocational skills development through Open, Distance and Flexible Learning: a case of the Hospitality and Tourism sector in Namibia

Adam Muheua
NAMCOL Tracer study of former professional programmes students

Tutaleni Nampila
Assessment of NAMCOL pilot tutorial centres: A comparative study

Michelle Maree:
“Flipping the Classroom”: An approach to student-centred professional development of lecturing staff at the Namibia University of Science and Technology (NUST).
AN EXPLORATION OF GRADUATES’ PERCEIVED COMPETENCIES IN HIGHER EDUCATION BY OPEN AND DISTANCE LEARNING: THE CASE OF BOTSWANA.

Ishmael Magare (Lecturer – School of Education – BOCODOL
imagare@staff.bocodol.ac.bw

ABSTRACT
The study explored the Values in Action (VIA) character strengths of in-service students admitted for the Diploma in Primary Education programme. It is embedded in positive psychology. The aim of the study was to explore the perceived competencies of in-service students admitted for the Diploma in Primary Education (DPE) in colleges of education – primary. A quantitative research methodology was adopted for the study. The pilot study was conducted in one of the three colleges of education-primary. A population (N) of 145 third year cohorts of 2013 was identified. A sample of (n) 35 third year in-service students in the Upper Teaching Elective of the DPE programme was conveniently selected from the population, which accounted for 24% of the population. 29 in-service students completed the survey of the competence scale for the pilot study and six (6) were absent. The survey was analysed empirically through the Principal Factor Analysis (PCA). The findings showed the presence of the following constructs in respect of the VIA strengths characters of the in-service students; Wisdom and Self-determination and include the following competencies; love of learning, honesty, perspective, curiosity and perseverance. The second construct of Fortitude also emerged and was made of social intelligence, bravery, judgement and open mindedness and zest. The researcher concluded that character strengths provide the basis for nurturing in-service students in the Diploma in Primary Education programme, and these enhance their wellbeing during their college life. It is recommended that instead of preoccupation with deficiencies, the Department of Training and Development should create conditions for the recognition of students’ signature strengths. This would nurture the competencies which in-service students bring into their training, help them project their alumni image and motivate them to fulfil their goals.

Keywords; Competencies, Positive psychology, in-service students, strengths virtues, wisdom and knowledge, and fortitude

Introduction
The Diploma in Primary Education (DPE) programmes was launched in 1994 (conventional) and 1999 (ODL) respectively (Kamau, 2008). Serving primary school teachers with a Primary Teacher’s Certificate (PTC) were admitted into the programme in second year for the conventional programme whilst the study by open and distance learning had a minimum duration of four years and a maximum period of six years. Although many teachers were nominated into the programme, they had to struggle with domestic responsibilities. They had to struggle between on the one hand, family and school, and on the other hand, cultural issues which presented their peculiar issues such as stigma especially to pregnant and lactating female students.

(Banda, www.col.or./pcf/papers/PPDFs/Banda_Florida Khumbo pdf retrieved on 16/08/2013). The learning orientations do not emphasise adult learning strategies (Mbengwa et al., 2013) and lecturers perceive in-service students as deficient, which further exacerbates the situation. Joseph & Linley (2004) Herman-Stahl &
Petersen (1996) Sharry (2004) propose that the dependency on deficiencies ignores the optimal performance and new ways to enhance livelihood and obscures the recognition of students’ unique strengths; provides prescriptive measures rather than students’ own solutions; seeks for patterns, such as academic gaps, and number of years spent out of college and a focus on the “cannots as opposed to the “cans”.

The adoption of positive psychology invalidates pathological thinking (Schreiner & Anderson 2005), and extends and explores strengths or competencies in educational contexts (Biswas-Diener, 2006 & Kashdan et al., 2002). Positive psychology is identified as the scientific study of positive experiences and positive individual traits (Peterson & Seligman, 2004). It is concerned with the well-being and optimal functioning (Duckworth, Steen, & Seligman, 2005) of individuals. Positive psychology focuses on positive emotions, strength of character, and positive aspects of human experience (Fredrickson, 2001; Park et al., 2004; Linley et al., 2007). It examines the conditions and processes that add value to optimal individual performance (Linley, & Joseph, 2004; Steen, Kachorek, & Peterson, 2003). The researcher therefore acknowledges that in-service students possess positive traits that positively play a part in the completion of their Diploma in Primary Education programmes whether by conventional or distance mode. These qualities need to be identified and nurtured to enable in-service students to be even more likely to be successful in the DPE programmes.

The Research Problem and Purpose of Study

Some studies (Kamau, 2009; Chimpololo, 2010) have been conducted based on the challenges faced by students studying for the Diploma in Primary Education in colleges of education - primary. These studies stigmatise and stereotype students as defective, point to existing academic gaps and perceive them as objects of policy in such educational programmes (Magare et al., 2010), furthermore the studies are skewed towards the deficit model of working with at risk students. The insistence on the deficit paradigm fails to address pertinent academic issues such as academic growth, self-determination and self-efficacy. The proliferation towards problems and deficit remediation is no longer relevant for facilitating the success of students in a knowledge seeking society. The shift to strengths builds on students’ motivational drives, sets realistic choices and goals contrary to preoccupation with academic gaps and related prerequisites (Schreiner & Anderson, 2005). This prompted the researcher to explore the existence of the signature strengths profiles for the in-service students of the Diploma in Primary Education, whether such profiles existed, if they did, how many where there, what did they reveal and relate about in-service students involved in the diploma in primary education in colleges of education?

Significance of the Study

The findings of the study will enable Training and Development (T&D) policy makers and distance practitioners (BOCODOL) to appreciate, embrace, and design curricula and instructional material based on learners’ needs as they review and design new programmes for in-service teachers. It will provide a paradigm shift from the overarching deficit-oriented studies in teacher education and stir up interest in subsequent studies towards the strengths-oriented models for conventional and distance education and subsequently remove the elitist perspective of traditional education.

Research Questions

What are the Values in Action - inventory Strengths (VIA – IS) for the in-service students of the Diploma in Primary Education (DPE) programmes?

What do the in-service students’ signature strengths reveal for the Diploma in Primary Education and other subsequent programmes?

Research Hypothesis

The research question will be answered by answering the following null and alternate hypotheses:

H⁰: There are no significant Values in Action - Inventory Strengths (VIA – IS) for in-service students of the Diploma in Primary Education (DPE) programmes

H¹: There are significant Values in Action - Inventory Strengths (VIA – IS) for in-service students of the Diploma in Primary Education (DPE) programmes
Theoretical Framework

Studies that have adopted factor analysis in positive psychology on the Values in Action (VIA) character strengths (Brdar & Kashdan, 2010; Choubisa & Singh, 2011) were able to produce a number of constructs (situational themes) depending on the study focus which did not vary much from the six generic areas produced through the iterative theoretical process (wisdom and knowledge, courage, humanity, justice, temperance, and transcendence) (Engel et al., 2011; & Niemiec, in press). The VIA strengths scale was developed as a universal measure to the character strengths of individuals’ life continuum (Peterson & Seligman, 2004). However nine character strengths (curiosity, love of learning, judgement and open-mindedness, perseverance, social intelligence, perspective, bravery, zest and honesty) were staked out for their possible theoretical determination to in-service students’ academic flourishing in this study. Bowers & Lopez (2010) indicate that there is an association between strengths (stable but can change in response to critical life events), goal progress, and psychological fulfilment and enhanced well-being. In Dewey’s philosophy, education should nurture students in order for them to flourish (Lopez & Louis, 2009). Niemiec (in press) notes that strengths are individuals’ ability (cognitive, affective, volitional and behavioural dispositions) to provide coherent and exceptional performance in any given situation (Schreiner & Anderson, 2005).

The strengths perspective strongly presupposes that in-service students in the DPE educational settings buffer against the effects of failing the diploma in primary education programme through the acquisition of study skills, thinking and problem-solving skills to levels of excellence (Lopez & Louis, 2009). Such assets make them flourish and eventually enable them to complete the programme despite systemic impediments. The VIA strengths philosophy emphasises that learners should discover their capacities and hypotheses that when students discover what they do best, develop and apply their strengths, they can reach their Zone of Proximal Development (ZPD) (Lopez & Louis, 2009). It is for this reason that character strengths are educationally valued styles of thinking, feeling, and acting that contribute to a fulfilling academic life for college students (Peterson, 2009). Strengths based models are initiated in student-centred didactics that primarily seek to transform them into assertive, successful, lifelong students whose work permeates with a sense of purpose (Anderson, 2000 in Lopez & Louis, 2009).

Lopez & Louis (2009) Schreiner & Anderson (2005) highlight that in contemporary society the heart of strengths-based programmes hinges on five principles: (1) measurement; the quantification of students’ achievements/pass rates; (2) individualisation; the acknowledgment and recognition of students’ unique qualities, their needs and interests; (3) networking; the routine inclusion of the significant others, friends, family and multi-disciplinary teams to acknowledge and appreciate their strengths;(4) deliberate strengths application; movement from theory to practice; and (5) intentional strengths development; innovative, creative and tangible results derived from teaching practice and/or other field experiences that result in feelings of accomplishment. Positive psychology therefore emphasises strengths-based approaches in educational settings and is a virgin field that should no longer be ignored (Seligman, 1998; Sternberg & Spear-Swerling, 1998; Baumgardner, 1990; Dodgson & Wood, 1998; Steele, Spencer, & Lynch, 1993). It proposes novel, enterprising, creative, resilient, thriving, flexible and meaning to the ever-expanding college clientele (Seligman & Csikszentmihalyi, 2000; Peterson & Seligman, 2004). It stresses optimal student functioning with a link to self-efficacy (Bandura, 1977) personal navigation, epistemological dispositions, emotional intelligence and information processing (Lopez & Louis, 2009; Schreiner & Anderson, 2005; Cameron, Dutton & Quinn, 2003; Aspinwall & Staudinger, 2002).

Research Design and Methodology

The research study adopted the quantitative research paradigm. The sub-scale contained 9 items on a five (5) point Likert scale ranging from ‘best describes me’ to ‘least describes me’ adapted from the strengths virtues scale (Appendix 3: Part 3 - Strengths). The 9 items were selected on the basis of their relativity to predict a student’s academic achievement (Seligman et al., 2005). A pilot internal reliability test was conducted on the convenient sample (n) of 29 third year students in the conventional Diploma in Primary Education to validate the internal reliability and construct validity of the graduates’ perceived competence scale chosen sub-scale (Carifio & Rhodes, 2002). These students were chosen because of their similar attributes that they had to...
the ODL students. The only difference was that some were chosen to study through the conventional mode whereas others were chosen to study through the open and distance mode due to limited places in Colleges of Education - primary. A Cronbach alpha (significance statistic) analysis of the signature strengths characters produced an internal reliability coefficient on nine (9) items $\alpha = 90.9$; an excellent internal reliability coefficient, construct validity and factorial procedures to be conducted (Tables 1 and 2) (De Coster, 2008) for the in-service students.

<table>
<thead>
<tr>
<th>TABLE 1: RELIABILITY STATISTICS</th>
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<tbody>
<tr>
<td>CRONBACH’S ALPHA</td>
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<tr>
<td>.909</td>
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<table>
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<tr>
<th>TABLE 2: ITEM-TOTAL STATISTICS</th>
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</thead>
<tbody>
<tr>
<td>SCALE MEAN IF ITEM DELETED</td>
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<tr>
<td>You are curious about DPE – DE programme and you strongly desire experience of it</td>
</tr>
<tr>
<td>You love learning new things, whether you are in a class or on your own</td>
</tr>
<tr>
<td>You think academic challenges through and examine them from all sides</td>
</tr>
<tr>
<td>When you want to academically upgrade yourself, you are outstanding at finding appropriate behaviour to reach that goal</td>
</tr>
<tr>
<td>You are aware of the motives and feelings of others, and of yourself, and you can respond skillfully</td>
</tr>
<tr>
<td>You have a way of looking at the world that makes sense to others and yourself</td>
</tr>
<tr>
<td>You do not shrink from threat, challenge, pain, or difficulty</td>
</tr>
<tr>
<td>You finish what you start. You take on difficult projects and finish them, usually with good cheer and minimal complaint</td>
</tr>
</tbody>
</table>
You are an honest person, not only always speaking the truth but also living your life in a genuine and authentic way.

The ‘Cronbach’s Alpha if Item Deleted’, column is the most crucial in the interpretation of (Table 2) as it represents the Cronbach alpha reliability coefficient for internal consistency if an individual item is eliminated from the scale. The individual item correlation coefficients also provide a goodness of fit to maximise the reliability and construct validity of the scale. The Cronbach’s alpha reliability ranges from 0 to 1 and the closer it is to 1.0 the greater the internal consistency; construct validity and factorial validity (Gefen & Straub, 2005, & Gliem and Gliem, 2003; Tavakol & Dennick, 2011; Webb et al., 2006).

**Population and Sampling**

The study was based in Botswana at one of the three colleges of education-primary which offered the diploma in primary education through both the conventional and distance mode. A population (N) of 145 in-service students in third year classes of 2013 were selected for the study. A sample (n) of 35 third year in-service students in the upper teaching elective of the DPE programme was conveniently drawn. However six (6) students were absent and 29 in-service students completed the survey of the graduate competency scale for the study. The nine signature strengths items were then selected from the overall scale for analysis (Appendix 3: Part 3 - Strengths).

**Sampling Adequacy**

The Kaiser-Meyer-Olkin (KMO) and Bartlett’s Tests (Table 2) were used to measure the strength of the relationship among variables of the measurement scale of the in-service students’ signature strengths. The KMO measured the sampling adequacy at 0.802 which had a p value > 0.5 for a satisfactory factor analysis to be administered. The Bartlett’s test yielded a confidence ratio of p value < 0.001 an indication that the correlation matrix (appendix) was not an identity matrix, each variable was able to measure independent signature strength.

**TABLE 2: KMO AND BARTLETT’S TEST**

<table>
<thead>
<tr>
<th>KAISER-MEYER-OLKIN MEASURE OF SAMPLING ADEQUACY.</th>
<th>0.802</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bartlett’s Test of Sphericity</td>
<td></td>
</tr>
<tr>
<td>Approx. Chi-Square</td>
<td>183.000</td>
</tr>
<tr>
<td>df</td>
<td>36</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Data Analysis**

The respondents’ biographic data (Appendix 1) and professional experience (Appendix 2) were analysed descriptively. The Principal Component Analysis (PCA) was used to find the factorial structure of the nine (9) VIA strengths character variables. The PCA is a reduction technique that produces a small number of factors from a large number of variables which explains the observed variance in the larger number of variables, ((De Coster, 2008; Khodadady & Yassami, 2012; Manhood & Kamel, 2010; & Costello & Osborne, 2005). The PCA was carried out through the orthogonal method of Varimax to produce stable results (Treiblmaier & Filzmoser, 2009).

**Data Analysis and Interpretations of Results**

**TABLE 3: TOTAL VARIANCE EXPLAINED**
Table 3 shows all the factors extracted from the analysis along with their Eigen values, the percent of variance attributable to each factor, and the cumulative variance of the factor and the previous factors. The first factor (Wisdom and Self-determination) accounted for 38.062 % of the variance, and the second (Fortitude) 35.763 %, this accounts for 73.824 % of in-service students’ virtue strengths in the diploma in primary education programmes.

Figure 1 shows the Eigenvalues of all the nine (9) variables under investigation. The graph shows two (2) factors retained. As a rule of thumb all factors that have Eigenvalues of less than 1 were rejected (De Coster, 2008). The interpolation marks a significant decrease from the retained factors 1 and 2 to the least factor (9) on the
extreme right that were rejected.

<table>
<thead>
<tr>
<th>TABLE 4: ROTATED COMPONENT MATRIXA</th>
<th>COMPONENT</th>
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<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>You love learning new things, whether you are in a class or on your own</td>
<td>0.870</td>
</tr>
<tr>
<td>You are an honest person, not only always speaking the truth but also living your life in a genuine and authentic way</td>
<td>0.834</td>
</tr>
<tr>
<td>You have a way of looking at the world that makes sense to others and yourself</td>
<td>0.795</td>
</tr>
<tr>
<td>You are curious about DPE – DE programme and you strongly desire experience of it.</td>
<td>0.747</td>
</tr>
<tr>
<td>When you want to academically upgrade yourself, you are outstanding at finding appropriate behaviour to reach that goal</td>
<td>0.642</td>
</tr>
<tr>
<td>You are aware of the motives and feelings of others, and of yourself, and you can respond skilfully</td>
<td>0.897</td>
</tr>
<tr>
<td>You do not shrink from threat, challenge, pain, or difficulty</td>
<td>0.890</td>
</tr>
<tr>
<td>You think academic challenges through and examine them from all sides</td>
<td>0.798</td>
</tr>
<tr>
<td>You finish what you start. You take on difficult projects and finish them, usually with good cheer and minimal complaint</td>
<td>.697</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
a. Rotation converged in 3 iterations.

The first construct (Table 4) is as well represented in Table 3 (Total variance) and Figure 1 (Retained Eigen value) 5.332 and Rotation Sums of Squared Loadings of 38.062%. In view of the individual five (5) items namely; love of learning 0.870, honesty 0.834; perspective 0.795; curiosity 0.747 and perseverance 0.642, the signature character strengths indicate a situational virtue of Wisdom and Self-determination. The second situational theme of Fortitude is defined through four (4) items – social intelligence 0.897, bravery 0.890, judgement and open mindedness 0.798, zest 0.697 have a total variance (Table 3 and Figure 1) of retained Eigen value of 1.312 and Rotation Sums of Squared Loadings 35.763. The two constructs have a total cumulative percentage of 73.824 towards the VIA strengths characters of the in-service students in the diploma in primary education programmes.

**Discussions, Conclusions and Recommendations**

The purpose of this study was to explore the existence of the signature strengths profiles for the in–service students of the Diploma in Primary Education, and what they reveal. The null hypothesis of no significant Values in Action - Inventory Strengths (VIA – IS) for in-service students of the Diploma in Primary Education (DPE) programme was rejected. The results confirmed the presence of significant Values in Action - inventory Strengths (VIA – IS) for in-service students of the Diploma in Primary Education (DPE) programmes (Tables 3, 4 and Figure 1). Character strengths which emerged (Table 4) comprised clusters of traits that hang together to define thoughts, feelings and behaviours (Engel et al., 2011) of the in-service students in the diploma in primary education programmes (Doe, 2011). The VIA character strengths are rudiments for positive development and thriving and contribute to students fulfilling life in the diploma in primary education programme (Park, 2009). The recognition of students’ strengths in the diploma in primary education may create an awareness of what is best about themselves and the significant others in successive years.

**Wisdom & Self-determination 38.062**
The virtues of wisdom and self-determination comprise five traits (Table 3) that are central to the understanding of VIA character strengths of the in-service students of the Diploma in Primary Education programmes (Seligman & Csikszentmihalyi, 2000) with a % variance of 38.062. Wisdom and self-determination describe the presence of the cognitive domain activities (knowledge, comprehension, application, analysis, synthesis, judgement and persistence) and is a significant determinant for success for in-service students in the diploma in primary education programmes. The five character strengths revealed in this factor (Table 4) include love of learning -0.870, honesty - 0.834; perspective - 0.795; curiosity - 0.747 and perseverance -0.642.

Love of learning 0.870
The character strength of love of learning characterises in-service students in the diploma in primary education. The findings (Tables 3, 4, & Figure 1) reveal that in-service students love learning new things, whether in class or on their own. Even though these students are faced with systemic impediments, such as academic gaps, negativity by staff who perceive the presence of these students as an extra burden, the results show that they are persistent in wanting to achieve the goals they have set for themselves (Onwuegbuzie, 1999). Goal oriented in-service students see beyond the now and stay focused because the accomplishment of their goals has a fulfilling effect on their lives (Carifio & Rhodes, 2002). It is that fulfilment that eventually defines their social, spiritual, academic, family, individuality and self-actualisation in life. The need for engagement in learning for in-service students finds definition from within. Intrinsically motivated students find flow in the material they learn and therefore the emergence of such a flow perseveres and enhances their efficacy.

Honesty 0.834
The results of the study show that in-service students are honest individuals that are dependable, genuine, and sincere and take responsibility for their actions and feelings. The findings (Tables 3, 4, and Figure 1) reveal that in-service students are honest people, not only always speaking the truth but also living their lives in genuine and dependable ways. In-service students have been in the public domain to represent the government (employer) and therefore must be committed to the Public Service Charter. The Charter (Republic of Botswana) guides officers both in their relations with each other and in their dealings with the public harnessing the duty to be informed, accountable, due diligence etc. (in the day-to-day engagements, instructional management and leadership roles they hold. Many of the in-service students have families in which they are breadwinners, spouses, head of a family and guardians. Failure to be honest in their responsibilities may compromise both professional and personal relationships. The virtue of honesty has been strongly expressed among in-service students pursuing the diploma in primary education programmes in colleges of education as one of their signature strengths and this contributes to realistic relationships, commitment to others and themselves.

Perspective 0.795
Perspective comes out as the third character trait under wisdom and self-determination of in-service students involved the diploma in primary education programmes. The findings (Tables 3, 4, and Figure 1) reveal that in-service students have a way of looking at the world that makes sense to others and themselves. The accumulated experiences of in-service students in the teaching profession (Appendix 2: Section A) provide a reference point for how they may perceive themselves. This allows them to adapt into the diploma in primary education programmes through reflexive capacities, rationality and exploration of multiple perspectives (Park, Peterson, & Ruch, 2009). The amount of knowledge gained through the ranks of the teaching profession (Appendix 2: Section B-D) enables them to listen and evaluate situations from multiple perspectives.

Curiosity 0.747
Curiosity is the fourth character trait revealed in this study under the wisdom and knowledge profile for in-service students in colleges of education. The findings (Tables 3, 4, and Figure 1) reveal that in-service students are curious about the diploma in primary education programmes and strongly desire the experience. Curiosity is the ability of students to explore and discover new experiences that come with the diploma in primary education. The curiosity trait enables in-service students to dream and soar beyond the unexplored territorial academic, professional, social (Appendices 1and2), emotional, psychological, relational and personal boundaries (Froh, Sefick, & Emmons, 2008). Curiosity consequently energises and fuels in-service students to be magnetised to pursuits that bring about personal growth and fulfilment (Peterson, Ruch, Beerman, Park, & Seligman, 2007).
Perseverance 0.642
The last character strength of in-service students revealed under the wisdom and knowledge profile was perseverance. The findings (Tables 3, 4, and Figure 1) reveal that in-service students want to upgrade themselves academically, and are outstanding at finding appropriate means to reach those goals. The ability to find appropriate solutions to problems does not occur by chance. In-service students need to work on problems repeatedly without getting close to the answer. There is a need for persistence and deep engagement where investment of time and effort matters most (Adelson, 2003). This is the ability for in-service students to persist notwithstanding barriers along the way. As a result of this perception, in-service students sharpen their skills, including study skills, networking, and peer interaction in order to successfully complete the diploma in primary education.

Fortitude 35.763
This virtue strength has a % of variance of 35.763. Fortitude represents the ability to recover from a stressful event. It implies the affective, constructive and growth-enhancing mechanisms against the systemic challenges faced by in-service students in the diploma in primary education programmes (Pretorius, 2004; Strümpfer, 2003). The signature strengths of social intelligence, bravery, judgement and open mindedness and zest are expressive of engagement, regenerative capacities, positive emotions and proactive survival mechanisms. The signature strengths under this virtue are key resilience indicators that enable in-service students to flourish in the diploma in primary education programmes. It provides autonomy, internal locus of control, self-efficacy and self-esteem in the face of stress and adversity (Wong & Wong, 2011).

Social Intelligence 0.897
The findings (Tables 3, 4, and Figure 1) indicate the in-service students’ emotional intelligence facility to decipher the motives and feelings of others, and of themselves and enable them to respond to emotions with thoughtfulness. Research (Nelson & Low: accessed on 05/11/2013) shows that effective self-management predicts academic and career success as students set meaningful personal goals and adapt to transitional processes. The skilful responses enable their emotions to support and adapt to the activities taking place in their immediate environment. In-service students find themselves in situations where there are despised for the perceived academic gaps. Social intelligence has enhanced the quality of life for in-service students as they skilfully look for ways in which they can appreciate and be appreciated and complete their studies successfully. Feist and Barron (1996) maintain that emotional intelligence (EQ) is a better predictor for success than intelligence quotient (IQ) scores. Labelling in-service students as deficient is emotionally mortifying, intellectually intimidating and oppressive, and frustrating to their well-being. Thwarting the notion of academic deficiencies (Lusch & Serpkenci, 1990) and emancipating themselves, in-service students have been able to manage these agonizing emotions and complete the diploma in primary education with quite good grades and in large numbers (University of Botswana, 2013).

Bravery .890
The findings (Tables 3, 4, and Figure 1) of the study identified bravery as one of the signature character strengths of the in-service students under the virtue of courage. In the educational context, the bravery of the in-service students is the ability to counteract threat, challenge, pain, or difficulties in the system. The findings (Tables 3, 4, and Figure 1) indicate that the ability to stand against threats allows in-service students to resist adversity. It reflects the confidence of in-service students to thrive in a system, which blames them for the dimensionalities of perceived academic gaps, age variables (Appendix 1and2) and stigmatisation (Gorski, 2010). In-service students see those as systemic challenges and develop mechanisms to prove them wrong. Some mechanisms include self-directed learning strategies to succeed in the rather painful learning circumstances. In the face of difficulties in-service students rise above their fears and seek help on how to go about the rather difficult, cold, dismissive and corrective educational contexts.
Judgement and Open Mindedness .798
The results indicated (Tables 3, 4, and Figure 1) that in-service students have a judgement trait as one of their strengths features. Judgement involves the ability of the in-service students to look at situations from multiple perspectives without jumping to conclusions. This strength enables in-service students to weigh up the challenges and opportunities that exist in the diploma in primary education programme open-mindedly and make informed decisions based on realities (Peterson et al., 2007). Taking multiple factors into consideration on any issues involves critical analysis of events, reflective judgement and allows in-service students more balance and rationalisation in their decisions (Park et al., 2009). The act of balancing perspectives helps students to avoid bias where lasting critical decisions are made. For example if an in-service student decides to drop out of the programme, they would have no guarantee that such an opportunity might come again any soon. Such a decision may actually spell doom for the student who may never recover from the ill-conceived choice (Peterson & Seligman, 2003). Teachers may be forced to retire from the system if they do not meet the requirements for teaching in the primary school if they had been given the opportunity and failed to utilise it. Failure to explore different possibilities may result in lifetime regrets, which might also perpetuate physical and psychological disorders and reduce the individuals’ lifespan (Froh et al., 2008).

Zest .697
The last character strength that emerged from the findings (Tables 3, 4, and Figure 1) relates to the ability of in-service students to finish what they start, taking on difficult projects and usually with good cheer and minimal complaint. Although in-service students are nominated into the diploma in primary education programme, they should have some intrinsic readiness level, some degree of commitment, meaning and purpose for them to be part of such a programme. Meaning evokes energy, excitement and some direction to in-service students who undertake the diploma in primary education (Peterson et al., 2007). Without meaning, enrolling for the diploma in primary education would be pointless for in-service students. The presence of meaning (Park et al., 2009) prepares in-service students to chart a life that is determined by some natural calling, finding pleasure and satisfaction in what they do (Peterson, Park, Hall, & Seligman, 2009). The age variables and experience factors (Appendices 1 and 2) do indicate that in-service students are committed to the profession if they can still undergo some further training after twenty to twenty-five years of continuous service.

Conclusions and Recommendations
The study of character strengths provides an impressive, strong background and insightful essential indicators for success in the academic life for in-service students in the diploma in primary education. The use of character strengths provides the basis for looking at the individualistic and psychological makeup of in-service students for the enhancement of their wellbeing and success. The study further shows that instead of preoccupation with deficiencies, the education system should nurture the competencies which in-service student possess and work on them in order to maximise their success. Focus on the character strengths of in-service students will augment and influence them towards achieving better results.

The situational virtues of wisdom and self-determination are clear indicators of the cognitive, affective and optimistic competencies of in-service students which make them resilient and should be emphasized to enable students to find greater meaning and purpose and celebrate their lives. The situational virtue of fortitude shows the ability of in-service students to bounce back from painful and stressful events. These two virtues enable in-service students to be realistic and optimistic about the choices they make in life. Guidance in this area would result in creative, reflective and self-actualised individuals who are fully functional in a knowledge-based society. Further studies may be carried out on larger college populations including the signature strengths of all the six generic areas adopting mixed methods approaches to research.
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COLLABORATION AMONGST SADC DISTANCE AND OPEN LEARNING INSTITUTIONS: LESSONS AND POSSIBILITIES FOR GROWTH AND SUSTAINABILITY OF THE ENTERPRISE

Bantu L K Morolong, Ph D
Botswana College of Distance and Open Learning (BOCODOL) Private Bag BO 187, Gaborone, Botswana
bmorolong@staff.bocodol.ac.bw

ABSTRACT
In the Southern African Development Community (SADC), as in other regions and Sub regions of the world, the concept of Distance and Open Learning (ODL) has been embraced, and so is that of collaboration. However, the answer to whether collaboration is fully achieved or not can be provided by individual countries or inferred from their national and institutional policy frameworks and other indicators. With this in mind, this paper aims to recognise the inroads that countries in SADC, through their institutions, have made to collaborate in their delivery of ODL programmes. However, the paper goes on to survey and document the experiences from those collaborative efforts with particular focus on the lessons that could be drawn from those experiences. The paper also seeks to establish the potential that those collaborations have or had to enhance the growth of ODL in this sub region. Using lessons from Universities, colleges and Associations, the paper concludes by highlighting the challenges of collaboration in the context of the uniquely diverse geographic and socio-economic environment. In spite of this diversity, the paper points to the potential for Countries and institutions in SADC to draw lessons from their collaborative attempts in the delivery of ODL and build on those for its growth in the 21st century and beyond so as to achieve borderless pathways to educational success and sustainable development.

Key Words; ODL, Collaboration, Institutions, SADC,

Introduction

In the Southern African Development Community (SADC) as in other regions and Sub regions of the world, the concept of Distance and Open Learning (ODL) has been embraced, and so is that of collaboration. Distance education is simply defined as teaching and learning which takes education to the many learners who are separated, by time and space, from those who are teaching. In other words, it is a mode that has a high potential for transcending barriers that are caused by distance, time, and age; thus facilitating lifelong learning (Komba, 2009:1). Increasingly, Open and Distance Learning (ODL) programmes are being regarded as one of the most practical ways to increase access to university education, that especially universities across the world are adopting(Chawinga & Zozie, 2016:2). Literature surveyed for this paper indicates that in most of the SADC member states, there is at least one institution dedicated or mandated to offer educational programmes by ODL (Botswana, Lesotho, Swaziland, Zimbabwe, Malawi, Namibia, Zambia, Tanzania and South Africa). And in many of these countries there are in fact several ODL institutions. While most of these are public institutions and some are of University status, there seems to be a growing number of private ODL institutions as well.

In spite of the fact that in Southern Africa ODL is still regarded only as an alternative to conventional education, literature surveyed for this indicates that it continues to grow (Pityana, 2009; Komba, 2009 Nyaruwata, 2011, Biao, 2012, Barasa, 2010). This growth is attributed to, among other factors, the realisation that in Africa, and particularly in Southern Africa, access to higher education is low (Southern Africa Regional Universities Association (2011 cited in Pityana, 2009;7) Also according to the Commonwealth of Learning (2002, cited in Chawinga & Zozie, 2016: 5), none of the countries in Sub-Saharan Africa have fulfilled the promise of...
providing education to their entire population through the conventional education system. This indeed is a disturbing fact.

Further highlighted is the range of challenges that are directly responsible for the poor status of higher education in Southern Africa. The challenges include: reduced funding by governments to public universities and other institutions of higher learning which are deemed to be more affordable than private universities; rise in competition for donor funding amongst private and public universities; increase in the number of students needing university education; and inefficiency in the use of the available resources by higher education institutions (SADC, 2012. Evidently, it is these facts that prompted the Southern African Development Community (SADC) to take the following position on ODL.

**SADC’S Position with Regard to ODL**

It is noteworthy that since the mid-1990s, SADC has shown significant commitment to develop and support ODL in the region. To this end, the following very important initiatives were undertaken:

a) SADC Capacity Building in ODL Project which was supported by the African Development Bank (ADB) with the goal to contribute to development and deployment of effective, harmonised open and distance learning (ODL), in order to increase access to quality education and training and to support regional integration

b) A Regional SADC ODL Policy and Strategy developed and agreed upon

c) Regional and national capacity to deploy and implement ODL strengthened

d) Two Regional Centres of Specialisation established (SADC (p.2).

In other words, the position of SADC on ODL is clear. It is a positive position of support since ODL is regarded as having the potential to serve as one of the tools for regional integration. It is also acknowledged that this support for ODL is informed by the fact that the region’s education sector faces a number of challenges especially those that relate to access, quality, relevance and equity. This situation has increasingly contributed to Open and Distance Learning being regarded as a viable strategy for addressing prevailing challenges in the education sector (p.14). Development of the tools and strategies as given above and all other initiatives was followed by a realisation that effective use and implementation of these would have to be anchored on strong foundations of regional integration which features collaboration.

**Collaboration in Education and Among Educational Institutions in SADC: A Focus on ODL**

Collaboration is the action of parties working together for a specified purpose. It has elements of cooperation or creation of synergy around an issue of common interest which in this case is education. In essence, there is collaboration when for instance, in education, members of an inclusive learning community work together as equals to assist students in succeeding in the classroom. This may be in the form of lesson planning with the special needs child in mind, or co-teaching a group or class or in the supervision of students’ research. Friend and Cook (1992:12). According to Ken Royal, 2014, collaboration means in its simplest, and most understandable form, getting individuals, who may or may not have similar interests, to work together in an organised endeavour to satisfy and achieve the most appropriate group end (1). Simply, collaboration is defined as a coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem (Alluri& Balasubramanian(2006).

All over the world there are many forms of collaboration that communities, countries, and regions use in pursuit of development. Among these are collaborative initiatives associated with education and community learning (PCF4: 2006). In the context of SADC, Education and Skills Development was identified, from the outset, as an area in which regional cooperation is necessary for developing knowledge, attitudes, appropriate and relevant
skills and human capacities which are necessary to promote investment, efficiency and competitiveness. (SADC Secretariat, 2009:6). It would be absolutely remiss if it was not acknowledged that long before these initiatives were made, there were already very bold forms of collaboration in education in the region. One of the most unique and notable ventures being that of a joint University of the then University of Botswana, Lesotho and Swaziland (UBLS) which functioned from the 1960s until 1974. This university was a product of a shared desire by three countries to have an institution of higher learning and they came together to collaboratively realise that dream. This was a noble idea out of which graduated many of the architects of the socio-political and economic development landscape of this region, sending a historical message that collaboration can yield commendable results.

In their discussion of collaboration in education and development, (Alluri and Balasubramanian (2006) said whether it is in formal or informal education, learning typically requires participation in a social process of knowledge construction and that knowledge emerges through a network of interactions. Further, these authors say that, according to (Kaplan, ASTD 2002), in the field of education and knowledge management, collaboration has been found to be a process of participating in knowledge communities. And therefore, Educational programs which are aimed at fostering development may draw knowledge communities together or create partnerships between educational providers, civil society, private industry and target clients or communities (p.1). It is recognised in this paper that generally, and in education in particular, collaboration happens at different levels including at individual one-on-one level, at group-to-group level and at institutional levels. Of particular interest here is the institutional collaboration within national contexts and across countries with a focus on the Southern Africa sub-region and only with regard to ODL institutions.

It is of course also true that in a context such as that of Southern Africa, there are identifiable forces or imperatives for collaboration which have to be appreciated in order to put their influences on initiatives for educational development through collaboration into a proper perspective. What is being suggested here is that collaboration in all sectors of development and in education in particular does not seem to be an approach that countries and regions of the world can afford to neglect. In fact, it seems to be one of the key preconditions for sustainable educational development. And in all contexts, at institutional level and nationally, there are certain push factors that make collaboration, almost invariably the way to go in order to effectively tackle the daunting challenge of educational development as espoused in many of the instruments, goals and declarations on education such as the EFA, the MDGs and National vision statements. In the next section of this paper, some of those push factors or imperatives for collaboration are identified to demonstrate the why and how of collaboration in ODL

Imperatives for Collaboration by ODL Institutions in Southern Africa

In almost all aspects of societal life, collaboration is always entered into because there are forces that make it necessary. Collaboration in Education in general and in ODL in particular is no exception in this regard. And some of the identified imperatives for collaboration in ODL include the following: First there is the issue of the questioned/doubted Quality of ODL Programmes. There is evidence to suggest that the quality of ODL Programmes is often scrutinised and regarded as poor, mainly because, there are no mechanisms or systems to regulate and monitor the quality and implementation of ODL programmes in SADC Member States(SADC, 2008). It is for this reason that, programmes which are delivered through open and distance learning are diverse and of varying quality and relevance. Subsequently, this situation is one of the reasons why the general populace in SADC Member States (MS) still has some negative perceptions about the quality of education delivered through open and distance learning.
As UNESCO observes, this then says that there are pertinent questions to be asked about the quality of ODL programmes, questions such as:

- How can ODL institutions, quality assurance and accreditation agencies, qualification recognition and credential evaluation agencies, advisory and information centre, professional bodies as well as governments, arrive at policies that protect learners from becoming victims of misinformation, and lpoor quality provision by rogue providers, bogus institutions, diploma mills and qualifications of limited validity?
- How can we ensure transferability of credits between institutions within and among countries? How can international validity and portability of qualifications earned through ODL programmes be ensured?
- How can we ensure the transparency, coherence, and fairness of procedures used for recognition of qualifications earned through ODL programmes?
- How can national quality assurance and accreditation agencies be established and empowered to intensify their international cooperation in order to increase their mutual understanding (OECD/UNESCO, 2004 cited in Komba, 2009:19).

There is no singular answer to any of these questions and it would be ambitious of any ODL institution to think that it could single-handedly seek answers to them. Instead, it seems true that these questions require interventions, coordination and collaboration among stakeholders at national and international levels. The desire to attain equal access to quality education can be a uniting factor among African member states (SADC, 2012).

The other very important reason why it would be necessary for ODL institutions of SADC to collaborate, is the fact that at present the ODL policy framework is said to be characterised by fragmentation which is not a conducive environment for regional integration (SADC, 2008). When there is fragmentation it is difficult to tackle yet another important cause and effect for collaboration which are common standards for quality assurance, accreditation, qualifications, credit transfer and recognition. The consequences of these are far reaching to include limited opportunities for labour mobility because those graduating from one context might be seen to be lacking in another context simply because there is no common interpretation of the qualifications.

In this paper collaboration is viewed as one of the necessary elements in ODL development. This is because there is evidence that suggests that in almost all the countries in Southern Africa, ODL is still in its infancy and therefore, internal efficiency of the offering institutions and agencies providing it is still limited (Komba, 2009: 18, Pityana, 2009, SADC 2008). However, as mentioned elsewhere in this paper, according to the literature, different countries in this region are at different stages of ODL development. Some have better resource bases, physical, financial and human resources. Assuming that countries in the region have the necessary capacity to introspect and acknowledge their weaknesses and strengths, are able to recognise the need to share, have sufficient levels and urge and impetus to, and are prepared to self-disclose to partners, then collaboration would mean a needed platform to mutually reinforce each other in growing ODL as a vehicle for regional integration.

These realisations would indeed offer opportunities for mentorship as collaborations are entered into with the more advanced institutions with the latter sharing their experience of growth with those whose ODL initiatives are only just budding. Komba further observes that the pertinent questions above as posed by UNESCO, need to be asked and tackled at broader, international level. It is perhaps against this backdrop that SADC (2008) took deliberate efforts to address some of the imperatives as discussed above and to develop what it deems mechanisms that could enhance possibilities for the growth of ODL in the region. While there is paucity of empirical evidence with regard to the bases on which some of the identified collaboration between some of the ODL institutions in Southern Africa are formed, there are records of mechanisms that have been employed to collaborate on the basis of some of the above-mentioned imperatives for collaboration. These are discussed only as “tried mechanisms” because evaluative information on the strengths and successes of these is also scanty.
Examples of Some of the Mechanisms for Collaboration among ODL Institutions in Southern Africa

Some of the following ways of collaboration have been tried by ODL Institutions in Southern Africa:

**Consortiums of Universities**

The Botswana Lesotho and Swaziland University concept seems to be close to what are recently known as consortia. Even though the universities that eventually came out of the UBLS were not in the strict sense ODL institutions, when the concept gained currency they picked it up within the dual mode framework. However the spirit that guided the UBLS does not seem to have continued for ODL. The three institutions were later joined by Namibia and they continued to push a research agenda through their Educational Research Associations (LERA, BERA, SERA and NERA). Through these associations these Universities have a biennial conference on Educational Research which they host on a rotational basis. Aside from the conferences, the original attempts were of Programme joint offers and awards of certificates. The most senior ODL institution in the region, UNISA, has some form of collaboration with many universities in many SADC countries.

**Associations, Networks and Discipline Based Associations**

There are or have been many of these in the region such as (Distance Education Association of Southern Africa (DEASA), Eastern and Southern Africa (ERNESA), Southern African Universities Social Science Conference (SAUSCC), National Association of Distance Education Organisations of South Africa (NADEOSA) Botswana Distance and Open Learning Association (BODOLA), NOLNet, some of which are national while others are regional). Of these a focus is made on DEASA. For Distance Education there emerged the Distance Education Association of Southern Africa (DEASA) a brainchild of the newly-established distance education institutes and colleges first as the DLA (Botswana Lesotho, Swaziland and South Africa) and then later expanded to include other Southern African countries. The association that the dual mode institutions have with DEASA is complex and seems to lack the strong ODL focus and the necessary ownership, with different universities defining it differently. This leaves the role of these institutions in DEASA very blurred and at times with a non-committal attitude to its business. However, the pertinent question in this regard is, what lessons can the current attempts at collaboration by ODL institutions of the Southern Africa region, draw from these earlier attempts. Possible springboards for collaboration and subsequent growth of the ODL enterprise that were identified in the literature surveyed for this paper include the following:

1. **Peer Reviews and Mutual Audits**
   BOCODOL and NAMCOL do this by focusing on among others, systems, policies, infrastructure, and quality assurance mechanisms.

2. **Establishment and effective utilisation of national and regional networks of ODL institutions such as of the DEASA type around issues of mutual interest such as ODL tutors and researchers association including instructional designers, module writers, editors and instructional technologists**

3. **Joint ventures in the design, production and dissemination of distance learning materials**
   Education institutions of BOLESWA(Department of Non Formal Education (DNFE), Botswana) Botswana Extension College, Lesotho Distance Education Centre (LDTC), Swaziland Emlalatini, Development Centre (EDC)) tried this with some of the South African institutions, South African Institute for Distance Education (SAIDE), The South African Committee for Higher Education (SACHED) Trust/TURRET Correspondence College) and some support from the Open University of UK. Such an approach has inbuilt mechanisms for mutual reinforcement, mentoring and cooperation as some of the key features of collaborative ventures.
4. Joint mutual capacity building, staff engagement and collaboration, external exams moderation, visiting scholars, professors, sabbaticants, mentoring

5. Benchmarking Exercises across Southern African ODL Institutions on areas of mutual interest.

6. Possibilities of transnational qualifications /SADC Qualifications Framework to guide ODL National Qualifications on ODL

Evidently, the thesis of this paper is that if ODL institutions in Southern Africa set their agenda for ODL growth through collaboration using the above, they would identify and create viable pathways for sustainable ODL in the region. This view is supported by Dodds and Youngman (1994) citing Bray (1992 and Snowden & Daniel, 1984 who saw cooperation where there is also collaboration, as an avenue for developing and sustaining distance education systems and worthy of consideration especially in the developing world. These are further acclaimed for cost effectiveness in many aspects of Programme delivery and for providing opportunities for shared access to other developmental resources such as training courses and Technical assistance (p.66). On the whole, collaboration seems to have benefits that ODL Institutions could derive if it is nurtured and systematically planned and supported. Some of those possible benefits are highlighted in the next section of this paper

The Benefits of Collaboration

In all cultures and linguistic expressions, collaboration, team work, or partnership or use of alliances is upheld as good for business, the military, industry, in politics and even in sports and so it is for education for the following benefits:

Collaboration in the offering of educational programmes can serve to increase the comparability of the quality of the products across institutions, nationally and internationally. Such collaboration has been posited in this paper, and literature also shows, it can be in the form of entering into joint ventures in the design, production and dissemination of distance learning materials. This would further enhance the concept of borderless offerings and increase production of a common product which is employable across the region. Collaborative efforts also have the potential to reduce the cost of education and training by maximising the economies of scale for institutions and for national educational systems as resources are shared and pooled across institutions (PCF 4, 2006; Powel, 2000; Dodds & Youngman, 1994, Komba, 2009).

Educational synergy and alignment of common goals. Of course there can be effective and ineffective collaboration. For the desirable form of collaboration, the most often mentioned precondition is institutional capacity to manage the collaboration (Botman, 2013; Butucha, Balyage, & Hotamo (2014: Kurasha, 2012,) Effective communication is central to collaborations management and for other environmental factors in the educational landscape such as defined policy on collaboration, and mechanisms for its implementation including resources to drive it, both human and financial.

As mentioned earlier collaboration has a very close relationship with team work. One of the most important aspects of team work is complementarity among partners. This is about using the strengths of the others as they also draw on yours. It seems very likely that as the other’s strength is used, there would also be lessons drawn about how to achieve that same strength. In an educational environment it is evident that such pooling of strengths will be much to the benefit of the learners and maximising of instructional outcomes (Powell, ... citing Wood, 1992: 5). This can happen for instance when there is exchange of academics in the form of visiting scholarship, team teaching and co-supervision of research, research collaborations and co-authorship of instructional materials, and conducting of collaborative research on ODL issues in the region..
Some of the collaborations could or do involve joint offering of programmes at the end of which the collaborating institutions would have a rare opportunity to jointly celebrate success while having accorded the product an opportunity to be international. The power of collaboration also lies in its capacity to offer opportunities for joint institutional success and development as well as a shared sense of purpose. Against the backdrop of a view that regional integration is a necessary condition for sustainable educational development in the SADC region, collaboration is likely to facilitate better mutual understanding of the ODL institutions’ mandates, thereby effectively preparing the ground for integration (SADC, 2012).

The need for collaboration amongst institutions of higher learning is the current trend of thought in various parts of the world. It is encouraged and supported in teaching, researching human capacity building, technological innovations and adoption, and in the design and delivery of academic programmes. In fact, it is noted that in education, collaboration between institutions in order to meet the needs of their clients, has long been an integral part of international best and accepted practice (Read, 2010 cited in Butucha, Blyage & Hatamo, 2014: 1). It is further recognized as a sign of realisation and acknowledgement (by the collaborating institutions), of their individual and common shortfalls and of the need for interdependence among institutions as the world is becoming increasingly globalised and human mobility across geographic boarders is increased. However, mention of the fact elsewhere in this paper, that collaboration is itself like a project that needs the collaborating parties to have skills to manage, should be taken to mean that it has challenges, some of which will be outlined below in the context of ODL.

The Challenges of ODL Collaboration in SADC as a Uniquely Diverse Geographic And Socio-Economic Environment

Even though there is a SADC ODL policy which effectively identifies collaboration among ODL institutions as a vehicle for regional integration, lack of integration in policies frameworks (where there are any) across the different National ODL institutions still persists as one of the major challenges (Pityana, 2009; SADC, 2012; Dodds & Youngman, 1994; Biao, a commonly perceived standpoint. Also identified as a challenge for collaboration are weak institutions which are in many instances also severely under resourced, because it is still regarded as second best.

Weakness of Institutions impacts on another very important aspect of collaboration which is communication. To effectively communicate there is need for infrastructure in the form of ICTs. In most instances this is also very limited as a result of limited funding to ODL institutions (Barasa, 2010). This is worrying because modern ICTs are increasingly becoming a viable platform for building learning communities among educational institutions as these facilities systematically continue to enlarge the canvas of learning communities by creating and increasing linkages, in country and across nation states. As a result of this realisation, ICT has become pivotal in ODL as a means of collaboration in learning and among teaching institutions. Compounding these challenges for some ODL institutions, especially those which operate as dual mode institutions is the reality that most of them are open institutions trapped in national education environments that lack strong focus on ODL (Biao, 2012: 21). For example, they operate within policy environments that effectively defeat the very purpose of openness such as qualification frameworks which prescribe entry requirements which are almost the same as those of conventional education without any concept for example of Recognition of Prior Learning (RPL) which is so central in ODL.

Diversity that characterises not only the educational landscape but the socio-economic and political environment which gives education its context is a challenge when institutions are to converge for a common goal. In the education landscape, there is diversity with regard to policies, standards for accreditation, mechanisms and frameworks for quality assurance, student/learner support especially for ODLs, as well as measures for programme responsiveness to national development concerns. Because of the said diversity, the national priorities and concerns also differ from country to country making even collaboration around a standardised curriculum itself a challenge. It is also the differing priorities that would impact on possibilities for research collaboration as the institutional frameworks for research are informed by the national research agenda.
Conclusion

From the foregoing account and analysis of collaboration by ODL institutions in Southern Africa, it can be concluded that in many of the SADC countries ODL is still very much in its infancy, as countries in this sub-region are still just experimenting with this mode. (Pityana, 2009). It is exactly this early stage of development that could present the potential to collaborate and learn together, with institutions which are at a stage ahead of others, such as the University of South Africa (UNISA) playing the institutional mentor role and creating enough synergy for this role to be effective. This would curb the silo mentality among ODL institutions which some of the collaborative initiatives such as (DEASA) have attempted to address. Of course, this is a mammoth task which requires extensive collaborative rethinking on the policies, programme identification, planning and delivery strategies. Collaboration itself requires skills in effective institutional relations and borrowing from what is common in conventional institutions, and perhaps from business and industry, ODL institutions would need to strengthen their partnerships and collaborations offices.

Africa also seem to point to the fact that the strengths of collaboration in educational delivery are to an extent recognized. What remains is a systematic effort to formalise this recognition, and the SADC Policy framework gives adequate guidance for this within the broader ideal of regional integration. The cited examples of attempts and experiences of collaboration, while providing scanty information about the content of the efforts, seem to confirm the view that collaboration by its nature is a deceptively simple concept with wide-ranging and exciting implications for those involved (Powell & Powell, 2011). And yet it always requires the parties to constantly consult when consultation itself is an inherently interactive and intricate undertaking. This notwithstanding, collaboration enables those involved who are usually people with diverse expertise, to generate creative solutions to mutually defined problems (Idol, Paolucci-Whitcomb & Nevins, 1987 cited by Powel, 2000:18). It is also evident that attempts to form collaborative partnerships in ODL have been made within environments that are not fully tailored for that to thrive. For example much as collaboration seems to have potential to offer an incredible set of opportunities for mutual learning and institutional growth, it is an ideal that requires internal impetus and consistent support such as the one provided by Institutions such as COL, SADC and in some instances the governments concerned.

It is against this background that it is recommended that the ‘how’ of collaboration would almost invariably have to involve first and foremost benchmarking and networking which will determine the choice of collaborators. These in themselves, would be research undertakings that would generate collaborative ventures in the identified areas of mandate for the ODL institutions of Southern Africa, especially those of higher education which is where ODL is increasingly gaining credibility. In an ODL context, collaborations in the choice and utilization of technology would be a must in order to facilitate standardisation of Learning management systems such as learner support, technology mediation of teaching and learning, assessment, and quality assurance and even in the programme choice and design processes.

If it is a convincing view point that collaboration facilitates the sharing of knowledge, then those involved in the collaborative processes must have the necessary buy in, so that the environment is conducive for setting common goals for the efforts to engage for mutual benefit. In other words the parties must be all convinced that the benefits are mutual and significantly reduce the likely power dynamics that sometimes stifle good intentions. And finally, there seems to be a strongly shared view that as the digital revolution extends throughout the world, it is important that the different dimensions of collaboration are addressed in expanding ODL and other educational initiatives in support of development. It is important that the different dimensions of collaboration are understood, particularly given the new challenges and opportunities associated with the digital revolution. A clear framework for collaboration in ODL and other education approaches would guide planning and implementation of development learning. SADC now recognises this, hence the acknowledgement of ODL as a platform for regional integration into the attainment of sustainable educational development.

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TECHNICAL AND VOCATIONAL SKILLS DEVELOPMENT THROUGH OPEN, DISTANCE AND FLEXIBLE LEARNING: A CASE OF THE HOSPITALITY AND TOURISM SECTOR IN NAMIBIA

J. Kavetuna
Namibia College of Open Learning (NAMCOL): kavetuna@namcol.edu.na

ABSTRACT

This paper draws on the current incredible developments in the technical and vocational skills development in the “Land of the Brave”. The technical and vocational skills development in Namibia has seen a major shift in the past few years with the establishment of the Industry Skills Committees’ under the Namibia Training Authority and lately the development of Tourism Training Namibia - an online training platform for all in the hospitality and tourism sector.

These initiatives were aimed at ensuring that technical and vocational skills development was done in an open, distance and flexible way of learning and to provide the skills needed by the industry to accelerate employment and economic development.

The paper provides an overview of the work of the ‘Industry Skills Committees’ ensuring that the technical and vocational skills were developed according to the needs of the industry to avoid mismatch. Furthermore, the paper also enlightened listeners on the training platform developed for the Namibian Hospitality and Tourism sector which is to enable people to learn new skills and upgrade their existing knowledge in order to remain relevant, useful and provide state of the art services to the customers. The method used was a desktop/literature review using the internet as a source of information and document review to validate the information gathered.

The review revealed that technical and vocational skills were crucial for national development and given high priority especially in the 21st century where most countries were aiming at becoming a knowledge-based society or knowledge-based economy. These skills can be developed through Open, Distance and Flexible Learning since it is the most appealing and accommodating way of learning.

The paper concludes by highlighting some recommendations for players in the open and distance learning fraternity to tap the emerging technical and vocational fields to offer more courses.

Context of the Study

The technical and vocational skills development has been given priority in recent years in Namibia to provide opportunities to all Namibians to learn new skills and upgrade their skills. This priority has been made possible by the establishment of the Namibia Training Authority to regulate the provision of technical and vocational education and to provide funding. This resulted in the expansion of vocational training centres, establishment of Industry Skills Committees for each sector and the establishment of vocational training providers (Namibia Training Authority, 2013).

The Industry Skills Committees advise the Namibia Training Authority on the skills needed in the industry. Specifically, the role of the Industry Skills Committees is to oversee the work of the Namibia Training Authority in engaging with the industry in order to ensure that vocational education and training arrangements meet the
needs of the industry in terms of their coverage, content and quality. The Industry Skills Committees ensure that the vocational education and training system is developed in a way which meets the needs of the labour market and the skills needed by the industry (Namibia Training Authority, 2013). The Hospitality and Tourism Industry Skills Committee advises the Namibia Training Authority on all the needs of the hospitality and tourism industry.

It is clear that the key to Namibia’s development lies in using education to develop the intellectual capabilities of its tourism workers. In order to develop technical and vocational skills, tourism workers need to interact with each other. Bates identifies two forms of interaction crucial to learning, namely; individual, which is the interaction of the student with the learning materials; and social activity, which is the interaction of students with each other and the learning materials (Bates, 1995). The value of learning by interacting and discussing with others has its roots in Vygotsky’s social development theory (Learning Theories 2012). Vygotsky maintains that students learn better when they interact with their peers under the guidance of a tutor or teacher who facilitates the learning process, than by learning independently (Learning Theories 2012). He also believes that social interaction plays a fundamental role in the process of cognitive development (Learning Theories 2012). In any group there are always those who are more knowledgeable about the topic of discussion than others. The interaction between the tourism workers will therefore result in those with less knowledge on a specific topic learning from the more knowledgeable ones.

On the other hand, Personalised, regular support and feedback on their online activities and assignments, provided by the tutor are essential for reducing dropouts (Alexander, 2001) and increasing student satisfaction (Sun, Tsai, Finger, Chen & Yeh. 2008).

For many years, Namibia has been importing skilled and experienced human capital to fill the gaps that exist in the labour market. In 2004, Namibia adopted a Long Term Perspective Plan, Vision 2030. Under this Vision, the country would operate a totally integrated, unified, flexible and high quality education and training system that would prepare Namibian learners to take advantage of the rapidly changing global environment. The ultimate objective is to balance the supply and demand in the labour market so as to achieve full employment in the economy. This is thus the key factor to Namibia’s Vision of becoming a prosperous and industrialised nation, developed by her human resources, enjoying peace, harmony and political stability (National Planning Commission, 2012).

According to the National Planning Commission, 2012, human resources development and institutional capacity building have been identified as some of the prerequisite strategic objectives for achieving the Vision, and for the implementation of the National Development Plans. The demand for qualified human resources in Namibia is high and will become even more intense in response to economic growth. However, the scarcity of skilled labour hinders effective and efficient programme and project delivery.

In 2012, the National Planning Commission developed the National Human Resources Plan and its associated implementation tools to guide the Government, private sector, civic organisations and training institutions on how to invest in industries with high growth and employment potential and in critical skills to meet the current and emerging developmental challenges (National Planning Commission, 2012).

The National Planning Commission, 2012 further indicated that Namibia shows signs of constant growth in secondary and tertiary industries indicating its capacity to sustain an industrial economy. It is stated that tertiary industries are the biggest contributors to employment thus indicating the potential for upgrading the skills of the labour force. Moreover, various Government initiatives, combined with its commitment to create a favourable business climate, with adequate social justice policies, are strong foundations for the country’s economic development now and in the future.

Additionally, the National Planning Commission, 2012 stated that Namibia’s potential for economic and employment growth is further hindered by the existence of mismatches between supply and demand of skilled workers; the opportunity cost of employment; labour regulations; low levels of labour productivity in the manufacturing sector; insufficient investment in sustainable rural development; and gender, age and
geographic disparities in terms of employment, disfavouring women, youth and rural populations. These are seen as obstacles for Namibia to compete effectively and efficiently globally.

In order to support and help to improve the economic growth of the country, Namibia has been investing extensively in the education system by ensuring free access to primary and secondary education, expanding the secondary school system by allowing enrolment in vocational education at the end of the junior secondary phase and by establishing entrepreneurship training. These important initiatives were put in place to enhance access, quality and efficiency of the educational system in the country (National Planning Commission, 2012).

Despite all these concrete initiatives, human resources development in Namibia still faces important challenges that have a negative impact on student persistence and success, learning outcomes and the preparedness of Vocational Training Centres and university graduates for the high-skilled job market. In addition, the higher education and vocational training systems have a limited capacity to absorb learners. This is evidenced by the low participation rates in higher education and its limited capacity to contribute directly to knowledge creation (National Planning Commission, 2012).

The technical and vocational skills development in Namibia has seen a major shift in the past years with the establishment of the Industry Skills Committees under the Namibia Training Authority and lately the development of Tourism Training Namibia - an online training platform for all in the hospitality and tourism sector.

For many years Government has been calling on the private sector to invest in skills development by offering scholarships and establishing training institutions to allow many Namibians to have access to education. It is against this background that the Deutsche Gesellschaft für Internationale Zusammenarbeit or GIZ and the Ministry of Environment and Tourism together with other relevant stakeholders have initiated the support, development and establishment of the Online Tourism Training Platform.

**Purpose of the Study**

The study aimed at establishing the skills development in the tourism and hospitality sector in Namibia. In the quest for excellence through tourism development, it is important to consider the skills in the Namibian tourism sector as well. At all levels the sector needs well qualified tourism human resources who are able to understand the needs of visitors and the necessity for efficient and friendly customer service. Therefore, the importance of training cannot be over emphasized.

The paper also provides recommendations for players in the open and distance learning fraternity to tap the emerging field of technical and vocational field to offer more courses.

**Research Methodology**

The study used desktop review through document review. The study is based on the belief that the social world of the participants of this study can only be understood from their standpoint (Cohen, Manion & Morrison, 2000). The subjective nature of this study places it in the interpretivist paradigm. To achieve the aims of this study document review and the internet were chosen as source material. Thomas (2011) defines a case study as “analysis of persons, events, decisions, periods, projects, policies, institutions or other systems which are studied holistically by one or more methods” (p.23) Which in this particular case includes desktop and document review.

The method used is desktop review using the internet as a source of information and document review to validate the information gathered.
Findings of the Study

The Tourism Training Namibia web-platform is designed to answer the training needs of the tourism industry in Namibia. The platform allows training providers to advertise themselves and their courses (Shifeta, 2013). In addition, the platform is developed with technical assistance from Namibia eLearning Centre and application Training and Management GmbH in the frame of a GIZ project with financial support by the Federal Ministry of Economic Development and Cooperation (Germany). The platform is endorsed by the Hospitality Association of Namibia (HAN) and the Goethe-Centre/NaDS Windhoek (Tourism Training Namibia, 2013).

Tourism Training Namibia (TTN) is a Platform offering training and education for the tourism sector in Namibia. Namibia’s tourism approach is well-known world-wide and often serves as a sample of best-practice in many aspects, be it community-based tourism or eco-tourism or simply the hospitality of Namibia’s people as well as the world-renowned guest farm system.

However, vocational and management capacity development of tourism related personnel is very costly (Tourism Training Namibia, 2013).

This platform is of its own kind in Namibia and for the first time brings together both demand and offers for training in the tourism sector of Namibia. Additionally, it offers various information in and around the tourism sector focusing specifically on training in and for the whole tourism sector in Namibia. This clearly shows that Namibia is working on tackling the challenges of skills shortage identified in the National Human Resources Plan.

The Tourism Training Platform offers training through Open, Distance and Flexible Learning. This platform is initiated by taking into account the ever-changing technology and by allowing as many Namibians as possible to have access to education at any time.

The main objective of the Tourism Training Platform Namibia is to provide an innovative tourism training platform for Namibia in order to ensure both the creation of a transparent tourism market and training in the sector as well as the capacity development of the various stakeholders involved (Shifeta, 2013). The platform brings together major and smaller players from within the tourism industry and the education sector. It further offers opportunities to widen training access, improve quality of training and increase training opportunities in the tourism sector.

The platform has different components ranging from the gathering of tourism training and employment information, pilot course development, marketing and process concept development, stakeholder networking and training of stakeholders and partners. The training platform aims to meet the needs of the end consumer/user /Employer (Shifeta, 2013). Tourism workers can inform themselves about career options, find training offers and identify training provision that meets their career needs. Additionally, training providers are able to introduce themselves and their offered courses, find training participants as well as manage courses. In addition, Tourism Training Namibia offers a fully functional online training system that allows training providers to run online training courses and allows participants to learn anytime, anywhere in open, distance and flexible learning modes.

In totality, the platform is a clearing house mechanism for the Namibian tourism sector in that it made information about training and job opportunities available online anytime. This becomes important especially for learners and job seekers as they have a one-stop shop where they can find all the information regarding training and job opportunities in one place (Shifeta, 2013). Furthermore, the platform stands to gain additional human skills in training management, training development and technical skills for the Ministry of Environment and Tourism and relevant stakeholders involved. The platform is a quality assurance mechanism in tourism training in cooperation with the Namibia Training Authority and Namibia Qualification Authority (NQA).
Despite the development of the training platform, funding for the training remains a challenge as many people who need skills are poorly paid or unemployed. However, with the imposition of vocational education and training levy, this could change for the better.

**Recommendations**

Although the training platform is still relatively new, it is crucial that awareness is created for the platform to benefit all Namibians. Thus, this paper recommends that;

- There is a need for funds to be availed for Namibians who would like to further their studies through the online training platform. This should be directed to people already employed with industry experience to be on par with the current development in the industry.

- Public-private partnerships should be promoted more to ensure strong collaboration, support, sharing of resources, avoiding duplication of efforts and ensuring sustainability.

- To ensure that TVET skills offered through Open, Distance and Flexible Learning remain relevant to industry needs, it is crucial that regular communication and consultation among various stakeholders is maintained at all levels such as development, implementation as well as monitoring and evaluation.

- The Namibia Training Authority should make use of the training levy to encourage organisations to allow their employees to make use of the online training platform by reimbursing or subsidising training costs for trainees.

- To ensure that the online training platform contributes meaningfully to national development, trainees should be encouraged to become entrepreneurs in order to create jobs for themselves and others. This will reduce the unemployment rate in the country and encourage sharing of skills.

- The online training platform should be extended to other sectors to ensure that more courses are offered and people who are interested in other fields are catered for.

**Conclusions**

The review revealed that technical and vocational skills are crucial for national development and should be given high priority especially in the 21st century where most countries are aiming to become a knowledge-based society or knowledge-based economy. A knowledge economy can be defined as one with production and services based on knowledge-intensive activities which contribute to an accelerated pace of technological and scientific advance as well as equally rapid obsolescence. The key components of a knowledge economy include a greater reliance on intellectual capabilities than on physical inputs or natural resources (Powell & Snellman, 2004, p.2). These skills should be developed through Open, Distance and Flexible Learning since it is the most appealing and accommodating way of learning.

Therefore, a well-established training platform should enable people to have access to training at any time, whenever people require training. However, it should be noted that acquisition of skills alone is not sufficient to eliminate unemployment and poverty in Namibia. Provision of training is a prerequisite, but a lot more needs to be effected to maximise the utilisation of the training platform. Funds availability, awareness creation, motivation and encouragement and public-private partnership should be promoted if the result of the training platform is to be realised.

In most situations change is not easily accepted. Jack Welch in Paulo (2007:34) argued that, “Willingness to change is strength, even if it means plunging part of the organization into confusion for a while”. Meaning, it is realised that there is nothing perfect and an innovation aiming at bringing about some improvement should be
tried, “by criticising everything new, attempts for innovations get thwarted and an old and defective system is allowed to continue” (Paulo, 2007)

References

NAMCOL TRACER STUDY OF FORMER PROFESSIONAL PROGRAMMES STUDENTS

ADAM MUHEUA
Department of Research, Development and Quality Assurance
The Namibian College of Open Learning (NAMCOL)

ABSTRACT
The purpose of the study was to trace the former students of the Professional Programmes offered by NAMCOL from the years 1999 to 2013 in order to establish their whereabouts and enable NAMCOL to make appropriate interventions to improve their Professional programmes.

Simple random and stratified (proportions) sampling techniques were used.

The tracer study found that, among other things that: (1) The most popular reasons given for enrolling with NAMCOL were that it was cheaper to study with NAMCOL and they also favoured the distance mode of learning NAMCOL is offering. (2) Most of them were in agreement that the programmes they studied at NAMCOL gave them skills to be able to do their current jobs and that the programmes were closely related to their current jobs. (3) Almost 45% of NAMCOL former students enrolled at other institutions of learning with the majority being enrolled at the University of Namibia. (4) The intention of NAMCOL to expand its current programmes to include Diplomas and Degrees levels was very popular and also to get credit for courses done with NAMCOL when enrolling with institutions of higher learning nationally.

The study makes a complete assessment of how the educational process has impacted on the graduates from NAMCOL’s Professional Programmes/courses in order for the College to make modifications that could enhance learners’ chances of achieving success in the ‘real world’ and enhance their marketability.

Introduction
The study outlines a tracer study to learn more about the whereabouts of former students who attended the Professional Programmes/courses at the Namibian College of Open Learning (NAMCOL). The study focuses on NAMCOL students who enrolled for Professional Programmes during the period 1999 – 2013. Over the years NAMCOL has done several Tracer studies on its Secondary programmes but not on its Professional programmes. Equally, the professional programmes form part of the courses offered by NAMCOL and this lead to a decision to conduct a tracer study on NAMCOL students of the former professional programme.

The surveys constitute one form of empirical study which provides valuable information for evaluating the results of the education and training of NAMCOL professional programmes. It is of the utmost importance that the College records its graduates’ whereabouts after graduation. This will help NAMCOL to know where its former students are, what they are doing and the challenges they faced after they left the College. The study makes a complete assessment of how the educational process has impacted on the graduates from NAMCOL Professional Programmes/courses as this will enable the College to make modifications that could enhance learners’ chances of achieving success in the ‘real world’ and enhance their marketability. The study provides quantitative-structural data on employment and careers, the nature of the work and related competencies including information on the professional orientation and experiences of the students.

Background Information - NAMCOL
The Namibian College of Open Learning (NAMCOL) is a state-supported educational institution, established by an Act of Parliament (Act No 01 of 1997) which provides study opportunities for adults and out-of-school youth. NAMCOL’s core activity has traditionally been its programme of Secondary Education (SE), which enables those who cannot or do not wish to attend formal schools to study for either the Junior Secondary Certificate (JSC or Grade 10, or the Namibia Senior Secondary Curriculum (NSSC or Grade 12).
NAMCOL operates under the auspices of the Ministry of Basic Education, Sport and Culture and is governed by a Board of Governors. Members from the Governing Board are drawn from different sectors and are appointed by the Minister of Education. The College is headed by the Director, who is assisted by four Deputy Directors and four Regional Managers. The College has a staff complement of over 100 full-time staff and over 1 900 part-time staff members.

Over the years, NAMCOL has made a significant contribution to the development of the country’s human resources. NAMCOL remains the largest educational institution in Namibia with over 40 000 learners. One of NAMCOL’s greatest strengths is the decentralised nature of its activities. NAMCOL has a presence in most communities because of the more than 100 tutorial centres spread across the country. It adopted a four-region structure to oversee the implementation of its programmes at regional level.

The NAMCOL Act directs the College to diversify its programme offering in order to address the diverse training needs by upgrading the professional and vocational skills as well as the level of general education of adults and out-of-school youth. As part of its programme diversification, the College has introduced new Technical, Vocational Education and Training programmes including Tertiary level programmes.

**Study Methodology**
This is a cross-sectional survey with a quantitative data approach to describe, explore, and explain the phenomena being studied.

The aim of the study is to trace the former students of the Professional Programmes offered by NAMCOL from the years 1999 to 2013 to establish their whereabouts to enable NAMCOL to make appropriate interventions to improve their Professional programmes.

**The objectives of the study were to:**
- Assess the contribution the College has made to its students by enabling them to find employment or gain entry to tertiary institutions
- Determine the success of the Professional Programmes, as measured by the perceptions of former students
- Establish what challenges NAMCOL faces relating to programme delivery and areas for improvements and
- Give feedback to NAMCOL for improvements based on their working experience.

**Study Population and Sampling**
The study population was chosen as former students of the NAMCOL professional programmes and the sample used were students who graduated between the years 1998 and 2013. This period is chosen because it gives enough time for students to have completed their courses at NAMCOL and looked for employment or furthered their studies.

Simple random sampling was used to derive the overall sample size of the students who graduated during the said period using a 95% confidence level and 5% confidence interval. Further stratified (proportions) sampling techniques were used to sample for respondents for the different programmes from each stratum.

**Data Collection And Analysis Methods**
The study used mostly a pre-coded structured survey questionnaire to collect the desired information. Additional open-ended questions were added to the questionnaire. The data collection tools were developed and pre-tested. Data was collected by using hardcopy submissions, telephonic completion of questionnaires and the Survey Monkey online completion. The Statistical Software Package for Social Science (SPSS™) was employed to enter and analyse the data.
The qualitative (open-ended questions) were analysed by identifying emerging common patterns and themes and categorizing ideas and concepts through coding. The themes and categories were further refined to make meaningful interpretations of the data.

**Limitations of the Study**

One of the major challenges was to trace former students, most of whom may have changed address. Some of the students' contact numbers were unreachable or non-existent meaning these students could not be contacted at all. Some of the students stated that they were interested in participating but when it came to completing the questionnaire either telephonically or via e-mail, they tended not to answer their phones or respond to their e-mails.

**Results and Discussions**

The majority of the respondents were females. In general, the majority of students enrolled for all NAMCOL programmes are female apart from the TVET programmes. Enrolment for secondary programmes and tertiary programmes for both years (2015 and 2016) was dominated by females at over 65% for the two years (The Statistical Digest, Namibian College of Open Learning, Research, Development and Quality Assurance Unit, 2015/17).

Although NAMCOL enrols students from all regions, the majority of the respondents were from Khomas followed by Oshana and Omusati regions. This can be attributed to the fact that the capital city of Namibia is in Khomas, while Oshana and Omusati are two of the most densely populated regions in Namibia. Of 14 regions, they have 20% and 9% of the total population respectively (Namibia 2011 Population and Housing Census, Namibian Statics Agency, Government of the Republic of Namibia.)

The highest qualification of the majority of respondents before enrolling with NAMCOL was Grade 12, followed by Grade 10. This is because the requirements for most of the Professional Programmes include a Grade 12 Certificate with a minimum of 20 points on the point scale of the Ministry of Education, an E symbol in English plus appropriate related experience or any other equivalent qualifications. Also Grade 10 with a minimum of 23 points or Standard 8 Certificate and an E symbol in English (NAMCOL prospectus 2016, NAMCOL, Namibia). The most popular reasons given for students enrolling with NAMCOL were that it was cheaper to study with NAMCOL and they also favoured the distance mode of learning offered by NAMCOL.

The majority of the respondents were working, this is made studying possible because of the distance mode of the programmes offered by NAMCOL. This is also what the respondents preferred ‘to work and study part-time’. The majority (27%) of the respondents worked as administrative officers and clerks, followed by pre-primary teachers (13%) and upper primary teachers (9%). The majority (53%) of the respondents worked for the government followed by private companies (12%).

Among the other ‘likes’ were the affordability, the relevance of courses, and the study materials of the courses as well as the distance mode offered. The dislikes included the distance to the vocational workshops, the turn-around time for assignments and the fact that their NAMCOL qualifications were not acknowledged by the institutions of higher learning in the country.

The majority of the respondents (77%) agreed that the programmes they studied at NAMCOL gave them skills which enabled them to do their current jobs and that the programmes were closely related to their current jobs (70%).

Almost 45% of NAMCOL former students enrolled at other institutions of learning. The majority (67%) of NAMCOL former students enrolled with UNAM followed by IOL The majority (27%) of them enrolled for Diploma programmes followed by Degrees (8%). The challenges mentioned included the turn-around time for
assignments, expansion of programmes to Diplomas and Degrees, decentralisation, monitoring of centres and extending the length of workshops.

Of the relevant things learned during the time studying with NAMCOL, the most mentioned aspects were improvement in language and communication skills, and the writing of proposals, business plans and reports. Also, how to deal with adults and the community, studying independently without supervision, citing and referencing as well as self-development and leadership skills.

**Recommendations**

**Marketing**

- **Awareness Raising and Promotion**
  
  The respondents felt that people were not aware of the different NAMCOL programmes and recommended that NAMCOL should explore more ways of making people aware of its programmes by using radio, newspapers, television, sessions with different ministries, sessions with regional councillors, using former students for promotions, sessions with politicians etc.

- **Decentralising of Marketing Activities**
  
  The majority of NAMCOL students were from the Khomas, Oshana and Omusati regions and the least came from the Hardap, Karas and Omaheke regions. More marketing and promotional activities should be directed to these regions with low registration numbers. As a distance education institute, more marketing should be directed at those people who are already employed especially those in administrative positions and government institutions.

- **Market Phrases/Messages**
  
  In order to encourage prospective students to join NAMCOL, in marketing the courses of NAMCOL, the following observations should be exploited and built on: ‘I wanted to gain higher qualifications’, ‘I found it cheaper to study at NAMCOL compared to other institutions’ and ‘I wanted to obtain additional qualifications. Promotion and marketing messages should also include and put emphasis on skills development, programme relevance, affordability and the part-time/distance nature of NAMCOL programmes.

- **Market Analysis**
  
  NAMCOL should do more market analysis in order to introduce new programmes and expand on the existing ones.

**Articulation of Courses and Expedition**

Negotiate with other Institutions of Higher learning especially UNAM for the articulation of programmes so that students can be given credit or exemption for courses completed with NAMCOL. NAMCOL should also expand its current programmes to include Diploma and Degree levels since most of the students claimed that the reason they went to other institutions was that they wanted to proceed to another level from the programme completed at NAMCOL.

**They stressed expansion of the following programmes:**

- Degree in Early Childhood Education
- Bachelor Degree in Education for Development
- Degree level for CECD
- Diploma for CWYC
- Diploma in Community Based Work with Children and Youth (CWYCY)
- Basic and advanced HR courses
Maintain Affordability of Courses
Most of the students were happy with the pricing of NAMCOL programmes and it is recommended that NAMCOL try to keep its programmes affordable.

Turn-around time for Assignments
NAMCOL should look at the assignment turn-around time and reduce it since the students wait too long for their assignments to be marked and returned.

Centre Supervision
NAMCOL should strengthen the supervision at centres because some students claimed that tutors did not seem to be committed and sometimes they do not turn up for classes.

Certificates
NAMCOL should double check the spelling of student’s names before printing the certificates because students complained that they were sent certificates with incorrectly spelled names.

Vacation Workshops
NAMCOL should try to decentralise the vocational workshops to the regions. The students are not happy with the distances they have to travel and the cost of the accommodation they have to pay while in Windhoek.

Tutors and Tutoring
NAMCOL should strengthen its monitoring of centres and tutors. Learners claimed that some tutors do not attend classes and lack commitment.

Learning Support Services
NAMCOL should make sure that its libraries are well stocked and cover all the fields of its programmes. NAMCOL should also concentrate on the promotion of web-based interactions.

Registration
Measures should be taken to reduce the long queues during registration.

Quality Checks of NAMCOL Books
Quality check the NAMCOL materials and books to detect any errors or missing pages.

Sign Interpreter during Vocational Workshops
Employ a sign language interpreter during vocational workshops where necessary.
ASSESSMENT OF NAMCOL PILOT TUTORIAL CENTRES: A COMPARATIVE STUDY

TUTALENI NAMPILA
Department of Research, Development and Quality Assurance
The Namibian College of Open Learning

ABSTRACT

A resolution was taken for NAMCOL to explore the use of its own full-time tutors. This was necessitated by complaints from the Ministry and affected principals. This resulted in NAMCOL setting up Pilot Tutorial centres in four NAMCOL regions.

The aim of this study was to assess the impact/success of NAMCOL full-time Pilot Centres on the learners’ performance. All the pilot centres were included in the study. Stratified sampling with proportionate methods was used to select the non-piloted centres. A comparative study between each pair of piloted centre versus its equivalent non-piloted was carried out. The traditional chi-squared test and Mantel-Haenszel for linear trend or correlation analysis were used for data analysis.

In some Grade 10 centres non-piloted centres did well. Non-piloted centres seem to have done slightly better than the piloted counterparts in three of the four cases of the test. The outcome of the test for the Grade 12s came out even more convincingly that the performance of learners not affected by the status of the centres (piloted versus non-piloted). In summing up, this study concluded that there was no significant impact on the performance of learners from the status of the piloted centres.

As a result of this study it was recommended to do away with the project pilot centres because the impact of the Pilot centres on performance was not significant.

Keywords: Pilot tutorial centres, Non-pilot tutorial centres, NAMCOL regions, learner’s performance

Introduction

This report covers the monitoring and evaluation activities at the four Pilot Centres established by NAMCOL in its endeavour to increase the pass rate of the Grade 10 and 12 learners. The report addresses and summarises the studies and other activities that have been conducted in relation to the management and operations of the Centres, perception of learners and tutors of the Centres and the impact of the Centres on the examination results of the targeted learners. The Pilot Centres were introduced in 2012 in the four NAMCOL regional offices.

The Pilot Centres for JSC were hosted at the following Centres: Dr. R. Kampungu (North-eastern region), Augustineum (Southern region), Oshakati SS (Northern region) and Kuisebmund SS (Central region).

The following Non-Pilot Centres for JSC were randomly selected to be compared with the above Pilot Centres: Sauyemwa SS (North-eastern region), Hage Geingob SS (Southern region), Okatana SS (Northern region), Swakomund SS and Coastal High (Central region).

The only Pilot Centre for NSSCO was in the Southern region at Augustineum and this was compared to Hage Geingob SS (as a Non-Pilot Centre).
Below are the learners' enrolments for the Piloted and Non-Piloted Centres:

**Graph 1: Enrolment (JSC and NSSCO) – Physical learners 2012**

The highest enrolments for Grade 12 were in Augustineum SS and Hage Geingob SS and for JSC the highest was in Kampungu SS followed by Oshakati SS

**Graph 2: Enrolment (JSC only) – Physical learners 2013**

The highest enrolment was in Oshakati SS and the lowest in Okatana CS
Background Information - NAMCOL

The Namibian College of Open Learning (NAMCOL) is a semi-autonomous educational institution established by an Act of Parliament (Act 1 of 1997) and it falls under the jurisdiction of the Ministry of Education. The College can trace its roots back to various continuing and distance education programmes available to Namibians before Independence. Late in 1994, these programmes were consolidated under a single directorate within the Ministry which can be regarded as the first step in NAMCOL's transformation into an autonomous institution. In April 1998, the newly established College took over responsibility for the programmes that were formerly provided by the Ministry of Basic Education, Sport and Culture.

The NAMCOL Head Office is situated in Windhoek at the Yetu Yama Centre. The College has four regional offices – in Ongwediva, Otjiwarongo, Rundu and Windhoek – and four sub-regional offices – in Gobabis, Katima Mulilo, Swakopmund and Keetmanshoop. Learner enrolment has grown tremendously from 10 882 learners in 1996 to 35 746 in 2013.

NAMCOL offers study opportunities for adults and out-of-school youth in three categories: Secondary Education, Professional Education and Vocational Education. The Secondary Education Programmes consist of the Junior Secondary Certificate, Grade 10 (JSC) and the Namibia Senior Secondary Certificate, Grade 12 (NSSCO). The Professional and Vocational Education offers the following programmes: Certificate in Education for Development (CED), Certificate in Local Government Studies (CLGS), Diploma in Youth Development Work (DYD), Certificate in Business Management (CBM), Certificate in Community-based Work with Children and Youth (CWCY), Certificate in Early Childhood Development (CECD), Diploma in Education for Development (DED), Diploma in Early Childhood and Pre-Primary Education (DECPPE), Automotive Mechanics, Plumbing and Pipefitting, Office Administration, Basic Computer Literacy Course, International Computer Driving License (ICDL) and the English Communication Course (ECC).

The College is committed to providing quality services to all its customers. The College is a member of the Namibian Open Learning Network Trust (NOLNet) and the Distance Education Association of Southern Africa (DEASA). The professional programmes are accredited by the Namibia Qualifications Authority (NQA). The Secondary Education study materials conform to the curricula of the Namibia Junior and Senior Secondary Education. The College is registered with the Namibia Training Authority (NTA) as a Vocational Training provider.

Rationale for the Report in Relation to Conducted Studies

NAMCOL offers two different modes of learning i.e. face-face and distance modes. The face-face mode involves facilitation by tutors and is offered to both Grade 10 and 12. The face-face mode is compulsory for grade 10, whereas for Grade 12 it is only compulsory for learners who take Agriculture or Science as a subject. The learners who opt for the distance mode are required to attend vocational workshops that are conducted in May and August. In addition to these workshops, study guides, assignments, tutorial letters and online facilities, the learners are expected to study on their own. NAMCOL makes use of part-time tutors to conduct the tutorials for these learners. These are tutors who are employed by the Ministry of Education on a full-time basis.

Concerns have been raised by principals and the Ministry of Education officials that these tutors are neglecting their full-time work by devoting too much time to tutoring NAMCOL learners. NAMCOL, on the other hand, experiences absenteeism, lack of commitment, motivation and exhaustion among these tutors. These concerns were further raised during the National Education Conference which was held in 2011. After considering the concerns from the Conference, the cabinet passed a resolution to explore the use of full-time tutors for NAMCOL. This resulted in NAMCOL setting up the four Pilot Tutorial Centres in four NAMCOL regions i.e. North, North Eastern, Central and Southern Central regions. The main aim of these Pilot Centres was to employ their own full-time tutors to offer the learners with the necessary support and guidance. The Pilot Centres were to run for two years after which they would be assessed in terms of their impact and success.
The Approach/Methodology used by the Related Proposed M and E Activities and Studies

Monitoring and evaluation of these Centres were conducted on a continuous basis as required by the NAMCOL management. Three reports/studies were conducted as part of the monitoring and evaluation activities. The reports/studies were on the monitoring and evaluation of activities at the Centres, comparative study of the impact of the Centres and the learners’ and tutors’ perceptions and experiences of the Pilot Centres.

Monitoring and Evaluation of Activities at NAMCOL Pilot Tutorial Centre

The aim of this specific report was to give feedback on the progress made on the activities at Centres including the management and operations of the Piloted Centres.

For this particular report a questionnaire was developed, pre-tested and distributed to the respective regions and Centres. The questionnaire covered the following aspects of the Centres’ operations and management: opening days and hours, supervision and monitoring, career development, recruitment of permanent and full-time tutors, subject enrolment, drop-out rate, examinations and assignments, mock examinations, learners’ enrolments, examination enrolments, learners’ and tutors’ attendance and extra mural activities.

Impact Study on NAMCOL Pilot Tutorial Centres: A Comparative Study

The aim of this study was to assess the impact/success of NAMCOL Pilot Centres on the learners’ performance.

The objectives of the study were the following:

- to analyse the examination result of the students at the Pilot Centres, and
- to compare the results of learners attending the Pilot Centres with those not attending the Pilot Centres (NAMCOL mainstream – Non-Piloted Centres).

Learner numbers in all Pilot Centres and Non-Pilot centres were used as a sampling frame. All the Pilot Centres were included in the study. Stratified sampling with proportionate methods was used to select the Non-Pilot Centres.

Table 1: The Stratified random sampling resulted in the selection of the following Centres for comparison

<table>
<thead>
<tr>
<th>NAMCOL</th>
<th>NAME - PILOT</th>
<th>GRADE</th>
<th>VERSUS</th>
<th>NAME - NON -</th>
<th>GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern</td>
<td>Augustineum SS</td>
<td>JSC and</td>
<td>VS</td>
<td>Hage Geingob</td>
<td>JSC and</td>
</tr>
<tr>
<td>Northern</td>
<td>Oshakati SS</td>
<td>JSC</td>
<td>VS</td>
<td>Okatana CS</td>
<td>JSC</td>
</tr>
<tr>
<td>North</td>
<td>Dr. R Kampungu SS</td>
<td>JSC</td>
<td>VS</td>
<td>Sauyemwa SS</td>
<td>JSC</td>
</tr>
<tr>
<td>Central</td>
<td>Kuisebmund SS</td>
<td>JSC</td>
<td>VS</td>
<td>Swakopmund SS/</td>
<td>JSC</td>
</tr>
</tbody>
</table>

The study used the examination results for 2012 and 2013 retrieved from the NAMCOL Data-base. A comparative study between each pair of Pilot Centre versus its equivalent Non-Piloted Centre was carried out. Data reflecting the percentage counts of performance achievements by grades A-U were used for every Pilot and Non-Pilot Centre.

The data was transformed into percentages to reduce possible effects of large variability due to unequal sample sizes of the various pairs of Centres. The graphics were generated using Microsoft Excel.
The data was summarised into two-way contingency tables, typically cross-classified by two categorical variables (having rows for the status of the Centre, with two nominal categories, Pilot and Non-Pilot, and columns for the grade achievements of eight ordinal categories, A to U and A+ to U in the case of NSSCO. Due to the ordinal nature of the grade achievement variable, an alternative test, Mantel-Haenszel ($M^2$) for linear trend or correlation analysis, which takes into account the order of the grades (A-U), was thought to be more reliable than the Chi-squared. As a result, the two tests were compared (Chi-squared test and Mantel-Haenszel ($M^2$)).

Here the data was also converted into percentages to reduce possible effects of large variability due to unequal sample sizes of the various pairs of Centres. The statistical analysis process was carried out on SPSS (Statistical Package for the Social Sciences).

A comparative study between each pair of Pilot Centre versus its equivalent Non-Pilot Centre was carried out. The traditional Chi-squared test is usually applied for such a setup of data to test for possible association (whether one variable’s distribution of outcomes is independent of the other variable or not). However, the Chi-squared test works best under the assumption that both variables are nominal.

Due to the ordinal nature of the grade achievement variable, an alternative test, Mantel-Haenszel ($M^2$) for linear trend or correlation analysis, which takes into account the order of the grades (A to U), was thought to be more reliable than the Chi-squared. Using this test approach, the hypothesis would be stated as:

$H_0$: no linear relationship exists between the two variables (independence)
(variables: learners’ performance versus the condition of the centre)

versus the alternative:

$H_1$: a linear or some other relationship exists between the variables

For analysis purposes, both variables were converted into numeric codes, with the status of the Centre coded as Pilot=0 and Non-Pilot=1; while the grade achievement counts were coded from 0 to 7 for the grades A to U. Another similar but separate test for linear trend, Cochran-Armitage, may also be considered for comparison and confirmation of the Mantel-Haenszel test results. A request for the Chi-squared statistic from SPSS automatically includes the result for the Mantel-Haenszel, but the Cochran-Armitage test would be optional. Both Mantel-Haenszel and Cochran-Armitage tests have an asymptomatic Chi-squared distribution with one degree of freedom. The Mantel-Haenszel is shown as “Linear-by-Linear” on the SPSS output.

Of interest, drawing inferences from the results of the tests, the correlation ($r$), the test statistic values and the corresponding p-values from the SPSS outputs will be considered to give insight into any relationship between the variables. In layman’s terms, p-values can be explained as the probability of making a wrong decision of rejecting a hypothesis statement when it is true (called Type I error). When obtaining a very small p-value for a test statistic, it basically means that it is almost beyond reasonable doubt that the hypothesis statement to be tested is false and must be rejected. Conventionally, smaller p-values than 0.05 (significance level of 95%) are considered to be convincing for the rejection of $H_0$. Extremely small p-values are associated with large test statistic values and usually lead to the rejection of $H_0$, whereas the opposite of large p-values yields smaller test statistic values, leading to the acceptance of $H_0$. In other words, for our arrangement of the hypothesis statements above, smaller p-values will be significant to reject $H_0$ in favour of $H_1$, hinting that the assumption of the existence of some relationship between the two variables holds true (but not necessarily linear); which could imply that the grading performance of the learners could depend on the status of the Centre.

Furthermore, from the way the variables have been coded, a positive correlation ($r$) would indicate that the performance of the Pilot Centre is better than its Non-Pilot counterpart. The strength of any difference in the performances, however, depends on the size reflection of the value of the correlation: the greater the positive $r$ value, the more significant is such a difference in the performance of the Centres.
Under the assumption of the existence of a linear trend, it would naturally be expected that the Pilot Centres should tend to have more scores on the upper grades, while the Non-Pilot Centres would predominantly be expected to be aligned with scores lower than those of the Pilot Centres.

In addition to the extensive comparative study done in 2012/13, the Unit did a comparison with the summarised examination results between the Pilot and Non-Pilot centres for the year 2013/14. This was done with the aim of making comparisons for the same Centres for two different successive years to give more weight to the previous findings and to see the differences. The comparison for the year 2013/14 could not include the Grade 12 NSSCO because of the introduction of the new Information Management system that cannot merge the results of the NSSC(O). Despite this, the current results significantly proved the same trend as before. Further, the study could not make the same comparison between Kuisebmund SS and Swakopmund SS because the Swakopmund SS did not have an intake for the year 2013/14. As a result Swakopmund SS was replaced by Coastal High SS for the comparison.

Assessment of NAMCOL’s Pilot Tutorial Centres – Learners’ and Tutors’ Perceptions and experiences

This was a qualitative study that investigated the perception and experiences of those learners and tutors at the four Pilot Centres. The study served as an investigation of how personality-type preferences played a role in learners’ and tutors’ perceived experiences of these tutorial services. The study population for this study was the learners and tutors in all four NAMCOL Pilot Tutoring Centres in Walvis Bay, Windhoek, Oshakati and Rundu.

The study used a non-probability sampling method that included purposive and convenience sampling. Tape recorders were used to record the proceedings of the discussions. The data was then transcribed and analysed using codes based on the emerging themes.

The following were the number of respondents for the study as per specific centre:

- **Windhoek**
  - 21 learners (6 males and 15 females)
  - 5 tutors (3 males and 2 females)

- **Rundu**
  - 12 learners (4 males and 8 females)
  - 8 tutors (all male)

- **Walvis Bay**
  - 12 learners (5 males and 7 females)
  - 6 tutors (4 males and 2 females)

- **Oshakati**
  - 9 learners (3 males and 6 females)
  - 5 tutors (3 males and 2 females)

**Total Learners** - 54

**Tutors** - 24

The study used two different questionnaire guides for learners and tutors to elicit the required information. Tape recorders were used to record the proceedings of the discussions. The data was then transcribed and analysed using codes based on the emerging themes. The study used uniform data collection tools consistently. Fair, honest, balanced detailed accounts were captured of the respondents’ experience and perceptions based on their own viewpoints in their own respective social settings.

**The Financial Implication of the Pilot Centres**

For the financial year (April 2012 – March 2013) NAMCOL spent N$2 518 961.32 on the wages of the tutors for the Pilot Centres. This amount represents about 9.6% of the total NAMCOL budget (N$26 141 744.21) spent on wages. Additionally, for the financial year (April – November 2013) NAMCOL spent N$1 760 562.00 on the...
wages of the tutors for the Pilot Centres. This amount represents about 6.3% of the total NAMCOL budget (N$27 987 802.11) spent on wages for the said period.

Summary of the Main Findings Related to the Report and Studies

Monitoring and Evaluation of NAMCOL Pilot Tutorial Centre

In the report on the ‘Monitoring and evaluation of NAMCOL Pilot Tutorial Centres’ it was observed that class supervision by the HoC’s was lacking in some Centres. In general, regions failed to provide Professional Development sessions and Academic Guidance despite the fact that the offering of an Introductory Course, Motivational talks and Career Guidance sessions were well conducted.

The following concerns related to the report on the monitoring and evaluations of NAMCOL Pilot Tutorial Centres were highlighted:

NAMCOL failed to employ their own full-time tutors in some Centres. The highest subject drop-out rates among learners were recorded as 80%. The lowest learners’ attendance was 41%. In contrast, tutors’ attendance was very good with the lowest attendance of 96%. Class supervision visits in some Centres were lacking as were the mock examination attendance and assignment submissions.

Impact study of NAMCOL Pilot Tutorial Centres: A comparative study 5.2.1 JSC (2011/12)

Graph 3: Comparison - Kuisebmund SS (Pilot) and Swakopmund SS (Non-Pilot)

Kuisebmund SS (Pilot) did better in the higher grades (A, B, C, D, and E) than Swakopmund SS. Also note the curve in the line graph.

Graph 4: Comparison – Kampungu SS (Pilot) and Sauyemwa SS (Non – Pilot)

Sauyemua SS (Non-Pilot) did well in the higher grades (A, B, C, D and E) compared to Kampungu SS (Pilot). The line graph illustrates clearly that the Non – Pilot Centres did well compared to the Pilot Centres.

Graph 5: Comparison – Oshakati SS (Pilot) and Okatana SS (Non – Pilot)
Okatana SS (Non-Pilot) did well in the higher grades (A, B, C and D) compared to Oshakati SS (Pilot). The line graph shows minor differences between the two Centres.

Graph 6: Comparison – Augustineum SS Pilot and Hage Geingob SS (Non – Pilot)

Hage Geingob SS (Non – Pilot) did better in the higher grades (A, C, D and E) compared to Augustineum SS (Pilot). Non – Pilot Centres did well as is clearly seen in the line graph.

5.2.2 NSSCO

Graph 7: Comparison – Augustineum SS, NSSC (Pilot) and Hage Geingob SS, NSSCO (Non – Pilot)

Augustineum SS for NSSCO (Pilot) did well in the higher grades (B, D and E) compared to Hage Geingob SS (Non-Pilot). No major differences observed between the two centres as seen on the line graph.

Graph 8: Comparison – Pilot and Non – Pilot All Centres, JSC
The Non – Pilot Centres excelled in the higher grades A, C, D and E. No significant differences observed between the two Centres as seen on the line graph.

Descriptive Statistics (examination results of 2012/13) 5.2.3 JSC (2012/13)

Graph 9: Comparison – Kuisebmund SS (Pilot) and Coastal High SS (Non Pilot) 2012/13

Kuisebmund SS (Pilot) did better in the higher grades (A, B, C, D, and E) than Coastal High (Non-Pilot).

Graph 10: Comparison – Kampungu SS (Pilot) and Sauyemwa SS (Non – Pilot) - 2012/13

Sauyemwa SS (Non-Pilot) did very well in the higher grades (A, B, C, and D) compared to Kampungu SS (Pilot)
Graph 11: Comparison – Oshakati SS (Pilot) and Okatana SS (Non – Pilot) - 2012/13

Okatana SS (Non-Pilot) did well in the higher grades (A, B, C and d) compared to Oshakati SS

Graph 12: Comparison – Augustineum SS (Pilot) and Hage Geingob SS (Non – Pilot) - 2012/13

Hage Geingob SS (Non – Pilot) did better in the higher grades (A and B) compared to Augustineum SS. (Non–pilot)

Graph 13: Comparison – Pilot and Non – Pilot All Centres, JSC - 2012/13

The Non–Pilot Centres excelled in the higher grades (A, B, and C)
The summative descriptive comparison for the period 2012/13 analysis revealed that there were variations in the results of the Pilot and Non-Pilot Centres e.g. in some cases Pilot Centres did better than the Non-Pilot Centres and vice versa. Hage Geingob Secondary School (JSC-Non Pilot) did well among the Non-Pilot Centres. Kuisebmund SS (JSC-Pilot), Oshakati SS (JSC-Pilot) and Augustineum (NSSCO) surpassed the compared Non-Pilot Centres in terms of higher grades. The Centres (Pilot and Non-Pilot) revoke each other in terms Higher Grades achievements.

As for the results of the comparison for the years 2013/14, exactly the same trend was observed as the comparison of the years (2012/13). The examination results comparison is even worse in the years 2013/14 compared to the previous years (2012/13).

**Results and discussion - Exploring relationship and associations**

As can be seen from the SPSS outputs (See Tables below), for the five pairs (including the consolidated data of all the Centres) of tests carried out, the results indicate that there has not been any significant impact on the performance of learners by the status of the Pilot Centres.

Considering the four pairs of Centres, only the Kuisebmund SS (Pilot) shows an improvement in the performance of learners over its counterpart Swakopmund SS (Non-Pilot). The test for this last-mentioned pair of Centres has a value of 9.162 with a p-value 0.02 which is significant enough to reject the of independence. The correlation for this pair is also significantly positive, 0.207, with an associated probability under null hypothesis of 0.003.

The results for the remaining three pairs of Centres (Dr Kampungu SS vs Sauyemwa SS, Oshakati SS vs Okatana SS, Augustineum SS vs H. Geingob SS) all have negative correlations (-0.262, -0.099, -0.116 respectively), albeit weak, except for the case of Dr Kampungu SS vs Sauyemwa SS which is significantly negative with a large test statistic value of 14.282. These could be indicative of the fact that Non-Pilot Centres did slightly better than the Pilot ones – contrary to what would have been expected.

Except for Kuisebmund SS vs Swakopmund SS and Dr Kampungu SS vs Sauyemwa SS where the observed p-values for the Mantel-Haenszel were 0.002, 0.0001 respectively leading to the rejection of independence of the variables, the test yielded p-values outputs of 0.115 and 0.154 respectively for the remaining pairs of Oshakati SS vs Okatana SS and Augustineum SS vs H. Geingob SS, i.e. failing to reject the assumption of independence of the variables tested. The reasons for the surprising outcomes are not clear to the analysts as to why the Non-Pilot Centres seem to have done slightly better than the piloted counterparts in three of the four cases of tests (for the three pairs of Centres other than Kuisebmund SS vs Swakopmund SS). The results discussed above also seem to replicate in the overall test for the case of the consolidated data for all the Centres.

The observed value of the test statistic value of 2.952 with a p-value of 0.086 for the combined data of all the Centres reveals that the performance of learners is not dependent on whether the Centre was a Pilot one or not. The correlation measure (-0.062) between the variables for this case is also negative and very weak, which also indicates independence of the variables if considered together with the test statistic.

The results for the two Grade 12 Centres are depicted in the tables below. The outcome of the test for the pair of Augustineum SS (Pilot) vs H. Geingob SS (Non-Pilot) Grade 12 came out even more convincing and that the performance of learners is not affected by the status of the Centres (Pilot versus Non-Pilot).

In comparison, Grade 10 Non-Pilot Centres have done slightly better than their Pilot counterparts in three of the four cases of tests and vice versa. The outcome of the test for Grade 12 came out even more convincing that the performance of learners is not affected by the status of the Centres (Pilot versus Non-Pilot). In summing up, this study concluded that there was no significant impact on the performance of learners from the status of the piloted Centres.
Assessment of NAMCOL’s Pilot Tutorial Centres - Learners and Tutors’ perceptions and experiences
Augustineum

Perceptions and Experiences of Learners
Generally they expressed positive opinions about the Centre apart from tutors and tutoring. ‘Let me just say, the Centre is really doing fine’. They had some reservations about some students claiming that some tutors do not teach well. ‘For me, the problem is that some teachers just teach us from the book’., ‘He/she (did not give any notes.) - like writing on the board or explaining’.

On a positive note they felt that NAMCOL did well in the establishment of this Centre and they felt that NAMCOL is fulfilling the ambitions of the students to continue and finish with their Secondary Education. They felt that a second opportunity is afforded by NAMCOL and that they should make use of it. ‘NAMCOL is really helping us to pull up our socks’ ‘so that we can achieve what we wanted to achieve in the future or to make our dreams come true’. Tutors tend to turn a blind eye to the learners’ attendance. ‘Teachers are not really serious with learners.’ ‘If a learner is absent, if a learner is not attending classes, they should be strict and ask the learners where they were and why they did not attend the classes that whole week’, ‘You come in, you walk out after 30 minutes, they don’t mind’. Some of the tutors don’t come to classes and they do not advise the learners accordingly. The learners would come to class and not find a tutor in the classroom. Besides these comments, they commended some of the tutors for preparing and teaching well. ‘Our ‘X’ subject teacher is very strict and teaches us very well’. This particular ‘teacher’ goes to the extent of phoning the learners about their absence. They felt that the time for classes is too short and should be extended.

Despite NAMCOL’s reputation, most of the learners agreed that they will recommend the Centres to others, mostly because it is an alternative for those who can’t make it to conventional schools ‘They (conventional schools) don’t allow you to repeat simply because of your points or your age’. I know some “kids” who don’t want to be seen to be coming from NAMCOL, but then it’s for your own good. It’s for you to improve your points’.

Dislikes
Sometimes classes ‘clash’ and result in some learners missing some classes. Tutors are unable to control learners who make a noise in the class. Tutors are annoyed with learners who use mobile phones in classes. ‘Sometimes people used to come with their phones and then they play their music very loudly outside the classes’. When the teachers observed that there are only a few learners in the class they refuse to teach those few who are present. The dress code of several learners seems to be perceived as inappropriate. ‘Ladies wear short things which are really inappropriate. You cannot come to class wearing something short, wearing something exposing and then...’ You cannot wear something exposing and then you expect the guys to concentrate in classes. ‘I understand they have hormones’. The knock-off time for classes was too late, especially during winter time. ‘The time is fine but when the time changes, 19H00 is dark and some people have to walk far distances’. Some learners express embarrassment at being associated with NAMCOL.

Recommendations for improvement by Learners

- Measures should be put in place to control learners’ absences or skipping of classes;
- Tutors’ absences should also be communicated to learners in time;
- NAMCOL should see to it that the tutors are well-prepared for classes and that they use additional resources to enhance learning;
- Procedures should be put in place to control tutors’ absences;
- NAMCOL should set out a clear timetable for learners about the classes;
- Decisions should be taken e.g. when to teach or not to teach based on the number of learners present;
- Control the other learners at the school e.g. not to hang around and look through the windows while NAMCOL tutoring is in process;
- Control learners’ dress codes and set rules for the use of mobile phones in the class;
• Raise NAMCOL’s image;
• NAMCOL to build its own Centres with own classrooms; and
• NAMCOL to make transport available to and from the Centres.

Positive Aspects about the Centres

Tutors
The learners are being attended to by ‘teachers’ who are not tired. ‘It’s not like somebody who has been teaching from the morning maybe to 13H00 and then later on maybe you come and join the group’. Tutors are committed and put much effort into tutoring. More time is given to interactions with learners. Many of the learners have enough text books and other material compared to formal schools.

Difficulties, Challenges and Constraints affecting Tutoring
One of the main challenges was the attendance of learners, especially in winter. ‘In Winter they don’t come. They say that they stay away because it’s dark, so by the time that winter is over and they have to catch up again, it’s already time for the examination’. The fact that NAMCOL starts late at the beginning of the year; for example, starting in March instead of January, puts tremendous pressure on tutors and learners to finish the syllabus on time. By the time the mock examination starts they have not covered what they are supposed to cover for the semester. Students complain about the fact that they are not taught everything that is on the syllabus.

The due dates, especially for the first assignments, were a problem because they are too close to the start of the first semester. One of the main problems was with the moderation of mock examination papers. The papers happened to have many mistakes on them and some of the papers were not complete. For example, The Otjiherero August paper had lots of mistakes and Paper One was missing.

Additional Activities
Tutors arrange classes after hours. They have netball and soccer teams that have been sponsored ‘By someone whose name I don’t want to mention here’. The soccer team happened to be the winner the ‘Goreangab tournament’.

Centre’s Management
They did not have anything negative besides praise for the Management of the Centre.

Recommendations for Improvement by Tutors
‘NAMCOL should reconsider starting the first semester earlier at the beginning of the year so that the learners are able to cover the semester work and are fully prepared for the mock examination;
‘Consider giving full syllabi to tutors;
‘Moderators for assignments and examination papers should be encouraged to do their work properly;
‘Consider starting classes earlier in winter;
‘Encourage learners to attend classes e.g. by putting some rules in place. For example: If you do not have a certain percentage attendance then you won’t be allowed to write the examination;
‘Measures should be put in place e.g. with registration, learners should be made aware that attendance is compulsory;
‘Provision should be made to attend to learners at Augustineum to provide them with or refer them to other Centres/facilities because for a month in the first semester, Augustineum learners have extra activities and NAMCOL learners don’t attend classes during that period;
‘The motivational speakers should be ‘appropriate’ people e.g. former NAMCOL learners that are at the Polytechnic of Namibia or the University of Namibia or who have completed their studies;
‘Time slots for the radio and TV programmes should be revised because the times at which they are broadcast most learners are in classes. Weekends should also be utilised for these programmes; and
• There should be a clear distinction between contact and non-contact learners at registration.

**Conclusion**

The learners have a positive perception about the Centres but they tend not to be satisfied with some of the tutors based on time management and their teaching approach. The dress code, noisy environment and non-cooperative learners came under the spotlight as well. In addition, the moderation of the examination papers and assignments emerged as one of the main issues.

**Oshakati**

**Perceptions and Experiences**

**Learners**

They described a positive experience and perceived the tutorial Centres positively besides requesting NAMCOL to appoint its own tutors. ‘They must just provide their own tutors for NAMCOL., They must not use teachers from other schools.

They agreed that they will advise everybody to make use of these Centres in the future because they are also cheap. ‘I think without this programme we will just be at home doing nothing’.

**Dislikes**

They mentioned that some tutors like to chat on their phones while in class, so do the learners. One hour per subject did not go well with them. They wanted more hours per subject. They also complained about dirty classes. ‘Classrooms are not in a good condition, not organised, papers are just lying all over’.

**Likes**

They like the way most of the tutors teach. ‘I really like the teachers because they teach us very nicely like explaining where we don’t understand. They ask questions if you don’t understand’. They had high appreciation of the books and other material that NAMCOL supplies. The tutors motivate the learners on a regular basis. ‘Attending NAMCOL is not the end of the world’. ‘You can pass and become someone in the future’.

**Recommendations for Improvement by Learners**

- NAMCOL should build their own Centres;
- They should change the time in winter;
- They should provide transport to and from the Centres.

**Tutors**

**Perceptions and Experiences**

They perceived the Centres as being very good. ‘This was an opportunity to help these learners who have failed so that at least when they come to classes every day and are in contact with their teachers it will help them to be serious about NAMCOL’

- Difficulties, Challenges and Constraints affecting Tutoring

The tutors have a perception that the learners are not serious about their studies, ‘they are lazy to read’ and they feel that the learners are being ‘spoon-fed’ too much. Learners’ absenteeism and ‘dodging of classes’ was a very big concern to them. Absenteeism for example, during normal class hours, during mock examinations, not handing in their assignments, coming late to classes and going out as they wish were some of the issues raised. ‘A lot of the learners are absent. Some we only see when they come to collect their assignments’, ‘When you give them a test and announce the test beforehand, most of them will not come’. Some of the learners are not interested in completing given activities. The indiscriminate use of mobile phones by learners
was of great concern to them. ‘Some of the learners usually chat when you are writing something on the chalkboard’. Learners in general have a negative mind-set towards Maths and Science and perceive them to be difficult subjects. The tutors find it difficult to convince them otherwise. Some learners enrol with NAMCOL and at the same time with other institutions ‘They will enrol here and attend classes for one month or two and from there they will vanish and when we make enquiries as to why they don’t attend classes, we learn that they are studying elsewhere’. Tutors are not able to identify who should attend or not attend specific classes. ‘We end up teaching anyone from the streets. We do not know them personally, so we end up teaching anyone, therefore we feel that having to present an ID would be helpful’.

Recommendations for Improvement by Tutors

- NAMCOL should put some rules and requirements for enrolment in place, e.g. a learner must have a minimum of 15 points instead of 2 points;
- The materials should not be provided with answer booklets so that the learners are compelled to do extra work;
- Put some mechanisms in place to control the learners that attend classes. For example, give them NAMCOL ID cards, a uniform like t-shirts with the NAMCOL logo on them, etc.;
- NAMCOL should build its own Centres;
- NAMCOL must come up with stricter regulations to control absenteeism e.g. 80% attendance before you are admitted to the examinations;
- NAMCOL should employ a secretary to run daily administrative work at the Centre;
- Marking and feedback from assignments should be timely, e.g. Learners should get the material in time to help them before they submit the second assignment.

Conclusion

The learners and tutors in general have positive perceptions about the Centres. The learners are satisfied with the way in which they are tutored and motivated. There were some reservations on time management by tutors and learners, use of laboratory, the use of mobile phones by both tutors and learners during classes and the dirty classrooms and also the maximum of one hour per subject.

Walvis Bay

Learners

Perceptions and Experiences
They all were in agreement that they found the Tutorial Centres to be good and helpful apart from some tutors who they considered do not do well. ‘Oh, I am just asking because some teachers look like they aren’t like how can I say...they aren’t good at the subject they are teaching’. ‘Tutor X, you can like see he does not have experience for it and all that, he is like reading out of the book’.

Most of the participants were of the opinion that they will recommend everybody to join the Centre. ‘The Centre is very helpful. I gain more understanding in most of the subjects like Life Science and Entrepreneurship’. ‘This Centre is like a normal school’.

Dislikes
They seemed to like everything about the Centres except for some tutors whom they mentioned. ‘Everything for us here at the Centre is smooth and it goes well’.

Recommendations for Improvement by Learners

- NAMCOL should appoint teachers with experience;
- The booklets contain many mistakes and they need to be well moderated.
Tutors

Perceptions and Experiences
They regard the Centre in a positive way because it allows more time for mentoring and for teaching and learning. ‘Myself, I think it’s a very good project because it’s trying to help those who have failed their Grade 10 exams so as to make them pass.’

Difficulties, Challenges and Constraints affecting Tutoring
They have difficulties using the school facilities like the photocopy machine and the multimedia services (computers and projectors). They don’t have full access to photocopy machines e.g. When they want to use them then the offices might be closed. The learners don’t want to accept that the Centre is full time. ‘Ja, so 30% of them feel that they are being forced to attend the classes’. Tutors have difficulties with those learners that have full time jobs. They find it difficult to come to classes. ‘They come and go back to work and so on’. ‘The working people normally are serious’. ‘The young ones, are not serious’. Sometimes they come and spend a few hours and go. However, there are those who seem to be serious about their work.

The other major challenges they have are with those learners who stayed outside the system for a long time, e.g. those who dropped out of school 10 years ago find it difficult to adapt and understand the new syllabus. Question papers come late sometimes and it’s difficult for those who work full time to ask time off from work time and time again. The tutor-learner ratio seemed to bother them. They sometimes teach over 40 learners per class which makes it difficult to give more attention to individual learners that are struggling. Learners’ lack of discipline was also a challenge to them. Some of them don’t listen during classes. They play, skip classes and are not serious about their education.

Additional Activities
The tutors happen to tutor on Saturdays. They have HIV/AIDS awareness clubs that are being assisted by the Catholic AIDS Action. They also have monthly motivational talks.

Centre Management
They commended the Centre for being managed very well. ‘Management of the Centre is not a problem. Whenever there is a problem at the Centre we approach it as a group. ‘We all stand together and we talk one thing. It involves everyone’.

Recommendations by Tutors
NAMCOL should implement certain requirements for admission. For example: A prospective student should not have been out of school for more than 5 years; NAMCOL should maintain a tutor-learner ratio; Learners should write tests every Friday.

Conclusion
Tutors found the Centres to be good, helpful and well-managed except for their reservation about some of the tutors. They found it difficult to access and use the school facilities where they are operating. They expressed difficulties with those learners who have full time jobs and those who had been out of the system for too long. Regarding the additional activities at the Centre, they run lessons on Saturdays, hold monthly motivational talks and they establish HIV/AIDS awareness clubs.

Rundu
Learners
The learners found the Centres and the tutoring to be good and the tutors encourage the learners a lot. ‘The centre is nice’. ‘I like the way I studied Life Science. I couldn’t understand but when I came to NAMCOL
I understand now'.

Dislikes
The learners were not happy with the knocking off time of 20H00. They think it’s too late for them. ‘We knock off very late - at 20H00 and some of our parents are not happy’. ‘We start at 16H00 and end at 20H00’. ‘Some learners had a different opinion about the knocking off time. They felt that it was fine with them. ‘Actually I don’t like knocking off earlier sometimes, like the lady who says knocking off at 20H00 is not good’. ‘For me it is good because some of us don’t have lights at home so I have to read until we knock off’. Whenever they want to study in the classrooms, they are occupied by specific school learners.

Likes
They like the way the tutors are tutoring. ‘I like the teachers. I am happy with the way the teachers are giving knowledge to us’. ‘I like this Centre because I think I am improving on my symbols which I got last year’.

Recommendations for Improvement from the Learners
- NAMCOL to build its own buildings;
- NAMCOL should revise the starting time and the knocking off time;
- NAMCOL should employ qualified and committed tutors;
- NAMCOL should encourage tutors to teach well and be committed.

Tutors
Perceptions and Experiences
The tutors have positive perceptions and experiences of the Centre. ‘The Centre is giving some learners that have given up hope a chance to continue’. ‘It’s more effective than the original Centre’. ‘Instead of these young boys and girls being thrown on the street, they have been given a chance to come back to school to some setting where they can be guided and to see how they can look at education differently from what it was like in the class….in a normal school’.

Difficulties, Challenges and Constraints affecting Tutoring
They have difficulties in tutoring learners who left school a long time back. ‘I know of a “kid” who I taught in Grade 10 in 2003 and he’s back now’. These learners need lots of attention and sometimes they hold the tutors back with their work. Learners’ absenteeism is a concern to them. ‘More than 40% of the learners walk away after registration’. Those learners that work full time seemed to be already tired when they come to the classes and some are not used to sitting in a class for a long time.

One of the main challenges was the admission of the learners to the Pilot Centre. The admission requirements should be revised. ‘The main challenge here is the admission’. ‘Since it is a pilot programme I was expecting that there should be specific criteria for the “kids” that will be admitted into the Centre’. ‘There are some “kids” who are admitted with something like 8 / 9 points.’ ‘From my observations, since the inception of this programme, there were no specific admission criteria that were used’. ‘ Learners with points as low as 7 or 8 were still admitted to the programme’. ‘ Learners, who have been repeating NAMCOL for so many years, are still part of this programme’. The tutors find it difficult to tutor these learners and to get them to pass at the end of the year because they have been out of school for so long. These particular learners are said to be undisciplined and disruptive to others. They felt that the learners do not express themselves in English. ‘At the end of the day I fail to apply a learner-centred approach, because they can’t talk. They fail to spell even basic words. 99% of them are repeaters’.

The time frame for normal school does not fit in with NAMCOL because NAMCOL starts late at the beginning of the year. The assignments and the mock examination do not match with what the learners cover during the
semester. The mock examination does not resemble the final examination. For example, Paper 1 is on its own and Paper 2 on its own. Fridays pose a great challenge to the learners because most of them do not attend classes on Fridays. They need some practical mobile kits to be used in class like for Life Science, Geography and Agriculture. They experience difficulties in using the school facilities. Sometimes they are not allowed to use them or the facilities are being utilised by the school staff members and other learners.

Learners get their materials and assignment questions when they register and they tend to be ahead of the tutors. Learners sometimes ask the tutors questions related to assignments well in advance. The memoranda for the assignments and the mock examination are not always accurate. The tutors then develop their own memoranda which puts them in conflict with the learners because the learners have access to the original memoranda. They feel that the examiners set papers on work that they did not cover. ‘I think it’s better for us to send the topics still to be covered to those who are setting the papers so that they know which areas we have covered’. They set questions which are way in advance of the study programme/material covered’.

They feel that those setting assignments are taking them from the Examination Boards from other countries like the Caribbean and they do not adhere to the current syllabus. They feel that NAMCOL does not positively acknowledge their work. ‘You don’t even receive a pat on the back to say look here, guys you have worked hard, this is good. There is no recognition and that also kills the spirit of working’. ‘I have a problem. Can I have 3 days paid leave? They also lack job security and their pay does not come on time.

**Additional Activities**

**Recommendations by Tutors**

- NAMCOL should make sure that the assignments and the mock examinations are in line with the study programme;
- The Centres’ tutors should be involved in setting up the mock examination papers and assignments if possible;
- NAMCOL should build its own Centres;
- Tutors should be asked to send the topics well in advance to those that set the assignments and mock examinations;
- Shop around for unutilised Centres like ‘Maria Mwengere Centre’ in Rundu to be used as a tutoring Centre;
- NAMCOL should have its own calendar except for the final examinations.

**Recommendations given by respondents concerning all the Centres**

(Note: These recommendations come from the respondents’ viewpoints and NAMCOL management is advised to be open to those recommendations that are realistic)

1. Consider starting the first semester earlier at the beginning of the year so that the learners cover the semester work and are fully prepared for the mock examination;
2. Consider giving full syllabi to tutors;
3. Moderators for assignments and papers should be encouraged to do their work properly;
4. The Centres should consider starting earlier in winter;
5. Encourage learners to attend classes by putting some rules in place like, if they do not have a certain percentage attendance, then they won’t be allowed to sit for the examinations;
6. Provision should be made to attend to learners at Augustineum to provide them with or refer them to other Centres/facilities because for a month in the first semester Augustineum learners have extra
activities and NAMCOL learners do not attend classes during that period;
7. Motivational speakers should be ‘appropriate’ people e.g. NAMCOL’s former learners that are at the Polytechnic of Namibia or the University of Namibia or students who have completed their studies;
8. Time slots on the radio and TV programmes should be revised because the times when they are being broadcast are times when learners are in class. Weekends should also be utilised for these programmes.
9. NAMCOL should build their own Centres;
10. NAMCOL should make transport available to and from the Centres;
11. The materials should not be provided with answer booklets so that the learners are compelled to do extra work;
12. Put some measures in place to check the learners who are attending classes. For example, give them NAMCOL ID cards, uniforms like t-shirts with NAMCOL logo, etc.;
13. A secretary should be employed to do daily administrative work at the Centre;
14. Marking and feedback from assignments should be timely, so that learners get the material in time to help them before they submit the second assignment;
15. Pay more attention to moderating NAMCOL booklets;
16. NAMCOL should put certain admission requirements in place. For example, learners should not have left school more than 5 years before;
17. A tutor-learner ratio should be maintained;
18. Consider giving learners tests every Friday to improve attendance on this day;
19. NAMCOL should employ qualified and committed tutors;
20. NAMCOL should encourage tutors to teach well and be committed;
21. NAMCOL should make sure that the assignments and the mock examinations are in line with the study programme;
22. Involve the Centres’ tutors if possible in setting up the mock examination papers and assignments;
23. Centre tutors can be asked to send in the topics well in advance to those who set the assignments and mock examinations;
24. Shop around for unutilised Centres like ‘Maria Mwengere Centre’ in Rundu to be used as a tutoring Centre;
25. NAMCOL should have its own calendar except for the final examinations;
26. Tutors should be reminded to be punctual in attending classes and spend the full time allocated with the learners;

Liaise with the Headmasters concerned to request the full use of the school facilities; NAMCOL should buy its own equipment like photocopy machines, computers, mobile practical items and projectors in the laboratory for use by NAMCOL learners at each Centre.

**Summarised Conclusion of all the Centres**

As the nature of this study has a qualitative approach, it was not practical to make a generalised finding; hence it deliberated on specific aspects Centre by Centre.

**Augustineum**
The learners have a positive perception about the Centres but they tend not to be satisfied with some of the tutors, based on time management and their teaching approach. The dress code, noisy environment and non-cooperative learners came under the spotlight.

**Oshakati**
The learners and tutors in general have positive perceptions about the Centres. The learners are satisfied with the way they are tutored and motivated. There were some reservations on time management by tutors and learners, use of the laboratory of the host schools, the use of mobile phones by both tutors and learners during classes, the dirty classes and also the maximum of one hour per subject.
Walvis Bay
The learners found the Centre to be good, helpful and managed well apart from their reservation about some tutors’ attitudes and teaching approach. They found it difficult to access and use the school facilities where they are operating. They expressed difficulties with those learners who have full time jobs and those who have been out of the system for too long in terms of adaptation and time. Regarding the additional activities at the Centre, they run lessons on Saturdays, hold monthly motivational talks and they establish HIV/AIDS awareness clubs.

Rundu
The tutors and learners have positive perceptions and experiences regarding the Centre. The tutors expressed dissatisfaction with the admission of some of the learners to the Pilot Centre, for example, with those with low marks and those who left school a long time before. Those teachers employed on a full-time basis cited lack of job security.

General Perceptions of Tutors and Learners
In general, the learners and tutors have positive perceptions and experiences about the Centres, but they tend not to be satisfied with some of the tutors based on time management and their teaching approach.

Conclusion and Recommendations
NAMCOL failed to employ their own tutors in some of the Piloted Centres as anticipated due to the unavailability of qualified tutors. In general, the learners and tutors have positive perceptions and experiences about the Centres but they tend not to be satisfied with some of the tutors based on time management and their teaching approach. The following general dissatisfactions were raised: dress code of learners, the use of mobile phones by both tutors and learners during classes, the restrictions in using the host school’s facilities including photocopy machines and laboratory, difficulties with those learners who have full time jobs and those who have been out of the system for too long to cope with the current curriculum and teaching. Tutors claimed that the admission requirements of the learners to the Pilot Centres were too low, hence the poor performance and results.

In general some regions failed to implement/provide the standard proposed activities despite the positive reaction to these activities in some other regions. The subject drop-out rates in some Pilot Centres are of great concern. On the other hand, the tutors’ attendance was excellent. The other areas of concern in some regions were learners’ poor class attendance and attendance at mock examinations.

There is no significant difference in the performance of learners from the Piloted Centres as revealed in the comparative studies. Additionally, these Centres place a heavy financial burden on NAMCOL’s budgetary operations.

As a result the project should be terminated primarily because the impact of the Pilot Centres on performance is not significant.

References/Bibliography
FLIPPING THE CLASSROOM: AN APPROACH TO STUDENT-CENTRED PROFESSIONAL DEVELOPMENT OF LECTURING STAFF AT THE NAMIBIA UNIVERSITY OF SCIENCE AND TECHNOLOGY (NUST)

Michelle Maree  
Namibia University of Science and Technology  
mmaree@nust.na

ABSTRACT

The Post Graduate Certificate in Higher Education is a new qualification presented at the Namibia University of Science and Technology (NUST) and was introduced to address the need for professional development of lecturing staff at the institution.

Graduate attributes in the 21st century include aspects such as the mastery and application of discipline knowledge, an ability to identify, evaluate and solve problems in their field of study, a demonstration of critical, conceptual and reflective thinking, and the ability to work both independently and in a group. Therefore, this approach to instruction can help learners to take control of their own learning and monitor their own progress.

The research population in this study is 25 participants who enrolled in the Post Graduate Certificate in Higher Education. This study explores the success of the flipped classroom approach as a student-centred teaching strategy. A mixed method approach was used to enhance and validate the research findings. A structured electronic questionnaire consisting of closed-ended and open-ended questions was used to gather information and a focus group session took place to gain further insight into participant’s experience with the flipped classroom approach before the findings were interpreted.

The paper demonstrates that the flipped classroom as used in the PGCHE is not only an effective teaching strategy in this academic programme, but it is also an approach that can be used by our lecturers in their respective classrooms to enhance engagement and active learning that will be appropriate for learners with different learning styles.

Key words: flipped-classroom, student-centred teaching, professional development

Introduction

This article reports on the use of the flipped classroom approach in a professional development programme for lecturers at the Namibia University of Science and Technology. This article explores the student-centred approach to teaching and learning through a flipped classroom approach as modelled in the delivery of the Post Graduate Certificate in Higher Education (PGCHE) and the impact that the application of the flipped classroom may have in the teaching practice of the lecturers. The flipped-classroom approach flips the traditional instructional approach and can be utilised to optimise scarce resources such as time, which is a valuable commodity for lecturers at the Namibia University of Science and Technology. Improving the quality of teaching in higher education has become a critical area (Knight, Tait & Yorke, 2006) and the Post Graduate Certificate in Higher Education was launched at the Namibia University of Science and Technology in March 2016 with a pilot group of 25 lecturers.
Studies have been undertaken already on the immediate impact of this specific programme (Carter, Maree & Shakwa, 2016 unpublished) at the Namibia University of Science and Technology. This research begins with the background of the study followed by the literature review on the flipped classroom as a blended approach to teaching and learning with a student-centred focus. The article then describes how the flipped classroom was implemented during the PGCHE. The success of this approach in other universities will also be described. The methodology used to collect the data for the paper will be described, and based on the findings I argue that the flipped classroom is an innovative approach to student-centred professional development that can also be utilised by the lecturers in their classrooms to create an active learning experience for students.

**Historical Background and Context of the Study**

The Namibia University of Science and Technology (NUST), the domain of this study, is entering into its second year of existence as a University of Science and Technology. Previously known as the Polytechnic of Namibia, many changes have taken place, which hold both a number of challenges and opportunities. This name change that has been brought about by the change in the Higher Education Landscape in Namibia holds a number of challenges and also opportunities for this establishment.

Only after Namibia gained independence in 1990, did the country embark on a number of reforms across various sectors, including higher education. In Education the four major goals were: access, equity, quality and democracy. The philosophy of the country’s education was based on “towards education for all” and it was well received and supported by the Ministry of Education. Prior to 19/1980, all students wishing to gain a tertiary qualification needed to study in South Africa or abroad, as Namibia did not have an institution of higher learning. Prior to 19/1980, all students wishing to gain a tertiary qualification needed to study in South Africa or abroad, as Namibia did not have an institution of higher learning. Shortly after independence in 1990 it was resolved that the three components be merged into two independent higher education institutions, namely, a university and a polytechnic. When the Polytechnic of Namibia by Act No. 33 of 1994, Technikon Namibia and the College for Out-of School Training (COST) merged to become the Polytechnic of Namibia, the institution gradually started to phase out vocational training courses and the Polytechnic was granted the opportunity to offer degrees. The Polytechnic became an independent and autonomous institution in January 1996.

With the reclassification and official renaming of the Polytechnic to the Namibia University of Science and Technology (NUST) on 16 November 2015, NUST has taken its rightful place in academe as an internationally recognised technological university. This has been possible with the tremendous support from stakeholders and the extensive networks that have built a respectable profile. This is evidenced in the numerous awards from here at home and from abroad, and a notable ranking in Africa. (NUST, Yearbook)

The reality, however, is that a large percentage of lecturing staff at the Namibia University of Science and Technology do not have any form of educational training and many have been appointed to lecture at the institution directly from Industry with a postgraduate (or a degree) qualification in their field of expertise. This institution does not have an induction course for lecturing staff that includes orientation and training in teaching, learning and assessment, meaning that the majority of the teaching staff at this institution learned haphazardly to teach and to assess.

The Post Graduate Certificate of Higher Education (PGCHE) (NQF Level 8) was introduced in March 2016 in adherence to the institution’s mandate of excellence in teaching and learning (Strategic Plan, PSP-4). The first cohort of lecturers is currently busy with course 2 of the 3-part programme in which participants will gain more insight and cognitive skills relating to teaching, learning and assessment. Of these 25 participants there are only three with a teacher’s qualification (either diploma or degree) which is an indication of the qualifications of the general teaching corps. Many of the academic lecturing staff were appointed at the Polytechnic of Namibia which had a different focus, offered a different kind of qualification and also served a different student population.
The Post Graduate Certificate in Higher Education embraces a blended learning approach that is modelled on student-centred teaching methods that include case studies, group discussions, role play, small group work, problem solving and using writing in the classroom. The participants (lecturers) then practise these skills in the classroom, and reflect on their experience afterwards. The instructional approach is based on Kolb’s experiential learning cycle where lectures gain an understanding that most students learn by doing, students learn through experience, and students learn through reflecting on their experience. The first course in the programme is Teaching, Learning and Assessment, followed by Curriculum Design and Development and then Technology Integration in Teaching and Learning.

In the section that follows, I will look at the importance of student-centred teaching, learning and assessment at a higher education institution, such as the Namibia University of Science and Technology.

**Student Centred Teaching Learning and Assessment**

The term “learner-centred” describes the concept and practice where students and lecturers learn from one another. It indicates a global shift from instruction where the lecture is fundamentally lecturer focused, to a form of instruction where the focus is on the desirable learning outcomes and the activities used to reach these outcomes. Learner-centred lecturers articulate what is expected of the students, design the appropriate educational experiences that will advance learning, and provide their students with an opportunity to demonstrate their success in achieving the learning outcomes. (USC, 2006)

Bristol (2014) argues that the old notion is that “the teacher should tell me what I need to know to pass the test”. The old notion also believes that, that teacher or lecturer is the only voice that matters and he or she is the provider of information. Bristol (2014) further states that in many disciplines the content overload is so intense, that the lecturer does not have time to prepare the students for what employers will expect of the graduates in the workplace; graduates who are creative with strong critical thinking skills who are in charge of their learning experience.

He states that a paradigm shift is required and the creation of learning experiences in the classroom that replicate reality. Students must “own” the crucial content themselves and the new notion requires that the lecturer should form a partnership with the student to fully prepare the student for the workplace.

The University of South Carolina’s Learner-Centred Task Force (2006) suggested that a learner-centred environment depends on the way the curriculum is developed and on the in-class strategies that encourage students to interact with the course content, interact with other students and with the lecturer and the learning process as a whole. The University of South Carolina’s Centre for Excellence in Teaching (USC, 2006), suggests five important aspects to keep in mind in order to engage your students in a learner-centred classroom. They are: (1) Know your students, (2) create interactive classrooms where students are motivated to own their own learning process, (3) Make the course relevant by relating to societal issues through cases studies, (4) teach through engaging students in discussion and debate, (5) Be available to students and allow students access to the lecturer if needed.

To conclude, the role of the lecturer is not merely to transmit knowledge but to facilitate learning. In the lecturer-focused classroom the focus is on the lecture itself and what to cover in a class where the lecturer has too much responsibility and the students remain passive throughout the class. In the student-centred classroom the focus is on what the students are learning and the lecturer guides the students to take responsibility for their own learning.
In the next section the article will focus on the Flipped classroom approach as a method of enhancing student-centred teaching and learning.

The Flipped Classroom

The flipped classroom approach has been used for years, mainly in the humanities, and Barbara Walvoord and Virginia Johnson Anderson promoted the use of this approach in their book “Effective Grading” (1998). They proposed a model where students gain first exposure learning before a class and then focus on processing that first exposure learning through synthesis, analysis and problem-solving. Walvoord and Anderson used an assignment-based model in which students produced work prior to a class such as writing and problem-solving and during the class the students would receive feedback through activities done in class (Brame, 2013).

The inverted classroom was first introduced by Lage, Platt and Treglia (2000), in an introductory economics class as they realised that their traditional lecture format was not compatible with all learning styles and came up with a solution to make it more compatible with their students. A variety of tools was used to provide exposure to material before the class (outside of class) in the form of textbooks, readings, videos, voice over power point etc. Students were required to complete worksheets in preparing for the class and these were randomly collected and graded. The time in lectures was spent on activities which encouraged students to evaluate, create and analyse economic principles and case studies based on the learning that had taken place out of class. In that case both students and lecturers found the approach positive because students appeared more motivated than when the course was delivered in the traditional format.

Ivala and Gachago (2012) commented on the fact that universities in South Africa experience very low levels of student success and poor throughput rates and that university lecturers need to explore different ways of teaching and learning. Their research “Learning at frikking four in the morning”, (2012) suggests that improved student engagement can help to improve student learning and the flipped classroom approach can be used to enhance student engagement and learning.

Astin in Ivala and Gachago (2012) describes student engagement “as the amount of physical and psychological energy that a student devotes to his or her academic experience”. Indicators of student engagement include taking the initiative, self-motivation, independent experimentation, spontaneous collaboration and peer coaching, and enthusiasm and/or frustration.

International studies on student development show that the time and energy being spent on purposeful educational activities is the best predictor of learning and personal development. Ivala and Gachago’s (2012) study was informed by socio-cultural activity and situational learning theories (Cole, 1996, Engelstrom, 1987, Greeno, 1989, and Vygotsky, 1978) which suggest that: (a) individuals are simultaneously involved in many settings (e.g. academic and social activities), (b) individuals create learning contexts for themselves within and across settings (e.g. students engage in academic activities on and off of campus), (c) the boundaries among settings can be permeable (e.g. academic activities started at campus and then filtering to student activities off-campus, and vice versa), (d) interest-driven activities can span contextual boundaries and be self-sustaining, given adequate time, freedom and resources (e.g. students can/will source topics which they are interested in on social media etc.).

Brame (2013), summarises the activities in a flipped classroom as such. Students gain their first exposure to new material outside of the class, and then use class time for the harder work of assimilating that knowledge through problem-solving discussion or debate. In terms of Blooms’ revised taxonomy, the lower levels of cognitive work are done by the students outside of class, on their own while the higher forms of cognitive work, such as application, analysis, synthesis, evaluation, happen in the class where students have the help of peers and instructors.
Johnson, Abia and Quest (2014) undertook a study at the Namibia University of Science and Technology to motivate that by using a MOOC (massive online open course) in conjunction with traditional classrooms, the students would enter the classroom prepared to engage material, so that the student-instructor contact time would be used to perform interactive exercises and assessments in class. This is a form of blended learning, or a flipped classroom. The writers of this paper wanted to motivate that blended classrooms making use of a MOOC, not only have a lower cost for the institution and a better outcome for the students, but also that the content attained by making use of a blended classroom prepares students better for the world of work. The greatest success that was identified in this study is that if MOOCS are used for classroom preparation, the in-class activities align with the MOOC content and feature interactive and collaborative learning approaches.

The blended approach acknowledges the utility of the tool, without diminishing the need for educational institutions. Examples of blended classroom activities include think-pair-share, reading assessments, group problem-solving, brainstorming, one-minute questions, decision-making, concept mapping, collaborative content generation and problem-based learning.

Johnson, Abia and Quest (2014) found that the greatest advantages of using the blended approach to teaching and learning is that (1) students can move through the MOOC on their own pace, pausing and repeating short video lectures allowing them to have control over their own pace and depth of engagement, (2) it provides automated assessment of complex assignments and students receive immediate feedback on their progress.

As a conclusion, from this study that was conducted in Namibia, the results suggest that a blended approach should be pursued, particularly in countries where English is not the first language of the majority of the learners. A direct spin-off is also that this approach to teaching decreases the workload of the lecturer once you have your MOOC content developed and in operation.

Implementation of the Flipped Classroom in the PGCHE

The flipped classroom as used in the PGCHE, is largely based on the work done by Professor Eric Mazur, who is regarded as the father of the flipped classroom. Mazur said that when people step into his class, it looks like and sounds like he is teaching a kindergarten class. The students are not sitting quietly at their desks, writing down notes as the lecturer talks and there is chaos at times as students are engaging in material and in discussions. Mazur advocates that the flipped classroom frees up classroom time to promote active learning through collaborative, project-based learning using simple display and sharing tools. (Demski, 2013)

The PGCHE embraces a flipped classroom approach where pre-recorded lectures and reading materials are uploaded onto the online platform before the face-to-face contact sessions, providing participants with the opportunity to work through the materials at their own pace. This approach is appropriate as it forms part of the blended learning method which includes online discussion forums on pertinent topics for each week. Lecturers are then fully engaged in the contact sessions which are reserved for discussions, micro-teaching and feedback.

The flipped classroom as a teaching methodology is widely used internationally and from research that was conducted over a period of time, evidence suggests that in most cases the use of the flipped classroom not only sparks engagement by students with the theoretical work but also contributes to the development of soft skills that are such a crucial requirement in the workplace. At Kennesaw State University in Georgia, a “fear of physics” contributed to high failure rates in an introductory physics class. The lecturer, Mzoughi, gradually blended the course and turned the classroom on its head with his flipped classroom approach. Instead of lectures, students completed on-line quizzes, listened to short recorded presentations in their own time, and used the class time to help students to fully understand the work through simulation exercises and problem solving exercises. Mzoughi conducted a poll over a semester and the results indicated that the students preferred a blended approach to a traditional approach or a full on-line approach.
Test results at the end of the period also indicated an improvement and the students mostly valued the interaction and learning experience. (Mzoughi, 2015)

**Theoretical Framework**

The theoretical base for this study can be explained through work done by John Bransford, Ann Brown and Rodney Cocking in their seminal work, “How People Learn” (2000,16). They reported on the key findings about the science of learning. In this study they concluded that in order to develop competence in an area of inquiry, students must (1) have a deep foundation of factual knowledge, (2) understand facts and ideas in the context of the conceptual framework, and (c) organise their knowledge in ways that facilitate retrieval and application. The flipped classroom allows for immediate feedback from peers and instructors and it can assist students in correcting their misconceptions about the theory or knowledge and organise their knowledge in such a way that they can easily access it in the future. The immediate feedback that takes place in a flipped classroom also assists students in thinking about their own learning and understanding. A metacognitive approach to instruction can help students to take control of their own learning by defining learning goals and monitoring their progress in achieving them. (Gilboy, Heinerichs and Pazzaglia, 2014)

Metacognition involves self-awareness regarding the student’s learning and the capacity to reflect on an action (Yorke and Knight, p 6). As class activities and active engagement allow for higher cognitive functions, they can lead to metacognition associated with deep learning.

Another theory that underpins the flipped classroom is the constructivist theory of learning that implies that knowledge does not come packaged in lecturer’s or student’s heads to be transmitted to one another. These individuals possess information not knowledge and therefore the knowledge should be constructed or reconstructed by individuals by trying to make sense of new information in terms of what they already may know. The construction and deconstruction of knowledge in which students engage is best done through the use of active learning strategies. (Gilboy, Heinerichs and Pazzaglia, 2014)

**Research Methodology**

A qualitative research approach was utilised in the research study. A purposeful sampling technique was used because the study targeted only participants enrolled in the PGCHE. The primary research questions that the study sought to answer were: what is the experience of the participants enrolled in the programme and what are the immediate impacts of the programme on their teaching practice? More specifically, the questions asked of the participants were the following: ‘What have you learned from this course?’, ‘What have you already implemented in your teaching?’, and, ‘What do you plan to implement in the near future?’ We also asked whether the participants noticed that they teach differently, and whether their students are learning and performing any different than before.

Questionnaires were distributed to participants during the first four weeks of the programme, and again six months later. Participants were asked to write short notes on their experience in the programme, the purpose of which was two-fold. The feedback from the participants would indicate whether they were satisfied with the content and delivery of the course, and secondly their feedback became a source of information for research.

Participants in the study were informed of intentions of the research as well as their right to refuse their written responses from being included in the results. All names used are pseudonyms. Twenty-five lecturers formed the first cohort of the PGCHE programme and of these twenty-five lecturers, only three hold a teacher’s qualification. One lecturer holds a Bachelor of Science in Education degree, and another a National Higher Certificate in Technical and Vocational Education. Another lecturer holds a Basic Teaching Diploma and a Higher Further Diploma in Education.
In the section that follows, I share the findings of both questionnaires which reflect the experiences of the participants thus far in the programme, as well as the immediate impact that the participants are experiencing in their classroom. A few participants also mentioned what they will be doing in the future to enhance their teaching practice.

**Research Findings**

Lecturers have adopted the flipped classroom approach which encourages students to be more independent and offers more opportunity for discussion. After the first 4 weeks of the course, a qualitative questionnaire was completed by the participants, and a number of the questions dealt specifically with their understanding and experience with the flipped classroom as described below.

**Based on what you have learned from this course, what have you already implemented in your teaching? What do you plan to implement in the near future?**

Many of the participants have already implemented various components of the course in the classroom and others have expressed that they will include them in the near future. The topics of the course that seems to have impacted on the participants the most was the student-centred approach to teaching and learning, learning styles (Kolb), the use of small groups and creating an active learning environment, the toolbox for lecturers, enhancing critical thinking in teaching and assessment, reflective activities and enhancing group discussions in class, aligning assessment with teaching and learning outcomes and the value of e-learning discussion forums and blogs.

This course uses a “Flipped Classroom” approach where materials are uploaded weekly onto the platform before the face-to-face session which is reserved for discussion, activities, etc. What is your experience with our “Flipped Classroom” approach? For many of the participants this is a new approach and something that they can use in their own classroom.

The majority of the participants enjoyed the approach as it allowed them to prepare and read up on the topic in advance (and in their own time) and allows for active engagement and an opportunity to raise and discuss questions in the face-to-face sessions. The participants also commented that the flipped approach allows for flexibility and taught them to do better time management, as there is quite a lot of reading. The reminders from the facilitators was also very helpful because the participants have many academic and workload responsibilities for which they need to take responsibility.

Many participants expressed the concern that the material is made available too late and that the material and reading should be uploaded already on a Monday. One respondent stated that “the flipped classroom is a good approach since it allows me to access the information and prepare before class and also encourages me to take charge of my learning without anyone pushing me”.

**Do you have challenges with the eLearning platform used for this course? If yes, what are those issues or challenges?**

A small number of participants are regular users of eLearning platforms and did not have any difficulty navigating the site and finding the information they were looking for and uploading work etc. The majority of the participants stated that they had no prior exposure to the NUST eLearning platform and found it overwhelming and that the instructions are not clear. A few participants struggled with the uploading of assessments and realised that the more active they are on the platform, the easier it becomes. One participant said that he had poor computer skills and nearly dropped out of the course because of that, but told himself to try it, as it is a learning process. All the participants who struggled with the use of the eLearning platform stated that they were able to master it towards the end of the course.
A suggestion was made by a few participants that a full two-hour face-to-face session at the beginning of the course should be dedicated to the navigation of the e-platform and the uploading of documents.

Six months after the first questionnaire, lecturers were requested to complete another questionnaire with the following open-ended question. “Based on all the topics from course 1 and course 2, can you see an immediate difference in the way that you teach, in the way that your students perform? Can you give an example or some examples to explain what you mean? “

“I think that the greatest impact that course 1 has had on my class thus far is improving class interactions, making it more student-centred. When I started off, my impression, due to lack of knowledge and experience, was that the lecturer must do all the teaching. It took me a while to adopt the ideas and implementations to get the desired interaction in class. Some examples of what I have started incorporating is having students give presentations, short group exercises, pre-class tutorials to encourage students to read up on the information prior to class. I have found that interactions have increased and students have the feeling that they can provide valuable contributions in class. On-line quizzes (integrating technology) have also proven to be beneficial for the students, they can gauge their prior knowledge and identify areas that need improvement about the topic”. (Emilia)

“I have realised that the flipped classroom that is used in the PGCHE is a good method and I have started introducing it gradually by giving students self-reading assignments and supporting them with power point presentations with not so much detail. ”(Pauline)

Discussion of Findings

Pauline has adopted the flipped classroom approach which encourages students to be more independent and offers more opportunity for discussion. Emilia also agrees that integrating technology into her teaching is proving to be beneficial to her students as they can determine their own knowledge through online exercises and then determine in what areas they need to improve.

Cynthia Bramer (2013) of the Center for Teaching in Vanderbilt University identified key elements of the flipped classroom that need to be incorporated for the approach to be successful.

1. Provide an opportunity for students to gain first exposure to material prior to class.
2. Provide an incentive for students to prepare for class.
3. Provide a mechanism to assess student understanding of the material available before class.
4. Provide in-class activities that focus on higher level cognitive thinking.

In the Post Graduate Certificate of Higher Education, the pre-recorded power point presentations, videos, articles, discussion questions and readings are uploaded well in advance to allow for the lecturers to prepare adequately for the face-to-face session. At the outset of the programme the instructors did not upload the material soon enough and the participants struggled to access and prepare the material in good time. This issue was however soon resolved. In the PGCHE the class activities are structured in such a way so as to assess the students’ understanding of the preparatory notes and focus only on the areas that the students do not understand in the face-to-face sessions. The rich class discussion and problem-solving activities are used to engage students actively on a higher cognitive level.

In the use of the flipped classroom, there are however two common concerns and these are: If the flipped classroom is so beneficial, why is there still a need for face-to-face sessions? And If I implement a flipped classroom approach, my students will just get the Power Point presentation and then not attend class.

The flipped classroom requires that the foundation of competence is built before students engage in the classroom learning experience. Students will need guidance and accountability as the classroom activities should focus on higher order thinking and realism that will prepare students for the workforce. In a traditional
classroom the transfer of knowledge happens during class time and the student is left to process the information on his own.

Flipped classrooms create an intrinsic motivational drive as students are not able to participate in a meaningful way if they have not participated in the pre-class activities.

Conclusions

Mazur in (Demsky, 2013) suggests 6 tips for best practice in flipping the classroom. These are:

1. Use existing technology to ease the pressure on staff and students into a flipped mind-set. The technology needs to allow for creating material with ease and for students to be able to access the information without any difficulty.
2. Be upfront with your expectations of the flipped classroom approach and be clear and enthusiastic about the flipped classroom approach. You have to advocate and lobby why you use this model and discuss with your students how to improve it.
3. Step aside and allow your students to learn from each other. When using an on-line discussion forum allow students to solve problems amongst their peers. An over-involved lecturer might dampen the spirit of discussion and problem-solving.
4. Assess students’ understanding of the pre-class assignment to make the best use of class time.
5. Set a specific target for the flip. Look at the pedagogy and determine where there are problems in the understanding or application of the theory, and flip that section of the work only.
6. Build assessments that complement the flipped model. Make use of a variety of assessment methods that not only assess individuals, but also groups. On-line participation should also be monitored and that can be done easily with any learner-management system.

As these tips by Mazur suggest best practice in flipping the classroom, research is indicating that the utilisation of the flipped classroom in the Post Graduate Certificate in Higher Education is already on its way to becoming best practice. As one of the students in the programme reported: “It think it’s a great approach. This way we can familiarise ourselves with the content in advance, then follow the face-to-face sessions more easily, and ask any questions to fill the gaps. If we didn’t understand a certain topic in the uploaded material, then we can clarify it during the face-to-face.”

The flipped classroom is a student-centred approach to learning that allows for students to be in control of their own learning, to be active learners and to be better prepared for the world of work.

References


SUB-THEME 3 QUALITY MANAGEMENT IN ODL

- Justin Lubasi: Investigating how a peer teaching programme could shape the mathematical experience of the participating tutors.
- Agathe Lewin and Dr R Shikongo: Quality Assurance in Open and Distance Learning: The case of the centre for Open and Distance Learning at UNAM.
- Fiona Anderson: The instructor’s level of English proficiency affects competence: A case for the Vocational Education and Training Sector.
- Cynthia Mhozya Marguerite M Serema: An investigation on Management and Monitoring of ODL system in Botswana: The case of Institute of Development Management (IDM)
INVESTIGATING HOW A PEER TEACHING PROGRAMME COULD SHAPE THE MATHEMATICAL EXPERIENCE OF THE PARTICIPATING TUTORS

Justin Mwandamena Lubasi
Namibian College of Open Learning
lubasi@namcol.com.na

ABSTRACT

This case study, involving six Grade 10 learners, investigates how a peer tutoring programme could shape the mathematical experience and disposition of the participating tutors. The study is grounded in an interpretive paradigm and data was collected in four sequential phases. The Mathematics Dispositional Functions Inventory (MDFI) instrument was completed by the tutors prior to commencement of the tutoring programme. The tutoring sessions then took place over a three week period during which time each tutor kept a reflective journal. Semi-structured interviews were then conducted, after which each tutor completed the MDFI instrument again in order to track any potential changes in their mathematical disposition. The study found that the participating tutors showed an improved mathematics disposition after the peer tutoring experience. Not only was the peer tutoring programme an empowering experience for the tutors, it also had a positive influence on both the tutors' self-confidence as well as their perceived mathematical ability.

1. Introduction of the Study

1.1 Introduction

The focus of this study was to investigate how a peer tutoring programme could shape the mathematical disposition and experience of the participating tutors. The contextual background is first described, followed by brief descriptions of the research goals, research design and the research process.

1.2 Context of the Research

In 2012 I was instrumental in instigating a Grade 10 peer tutoring programme in the school where I worked as a mathematics teacher. Ten learners whose mathematical performance was better than their peers were chosen to act as peer tutors. Each peer tutor was assigned between twelve and fifteen tutees. I would meet with tutors once a week on the day prior to the weekly tutoring session in order to help them prepare for the upcoming session. The weekly tutoring sessions were held in the school hall, each session being two hours long. Each tutor was responsible for his or her tutees, and it was the role of the tutors to assist their tutees with the particular topic chosen for the week. The programme ran from February to October 2012 and was successful not only in terms of improved Mathematics marks of the tutees, but also with respect to the tutors. I was particularly struck by the change in the tutors over the course of the tutoring programme. There seemed to be a general improvement not only in their Mathematics, but in their schoolwork and general behaviour and conduct as well.

Walker (2007) asks a critical question: “How can schools – even those schools where the average mathematics performance of students is poor – build on the experiences and behaviour of successful students to spur improved mathematics outcomes?” (p. 58). One possible approach could be to engage better performing students to help their peers in a peer-tutoring environment. An interesting aspect of such peer tutoring programmes is the potential influence on not only the tutees, but on the participating tutors as well.
Topping (2005) reports that there is evidence to suggest that peer tutoring can yield significant gains in learners’ academic achievement. Furthermore, in peer tutoring, tutees as well as tutors can have academic gains if the peer tutoring programmes are well organised. With this in mind, and faced with the challenge of poor mathematics results in many Namibian schools, the potential inherent in formal peer tutoring programmes is certainly worth exploring.

1.3 Research Goals
This study investigates how a peer teaching programme could shape the mathematical experience of the participating tutors. The study is framed by the following research questions:

1. How does peer tutoring shape the mathematical experience of the participating tutors?
2. How does peer tutoring shape the mathematical disposition of the participating tutors?

1.4 Research Design
This study is orientated in the interpretative paradigm (Leedy & Ormrod, 2005). The research took the form of a case study, the case under scrutiny being a group of six peer tutors, while the unit of analysis was the experiences of the tutors, with specific focus on their mathematical disposition. Three methods of data collection were used, namely the Mathematics Dispositional Functions Inventory (Beyers, 2011), reflective journals and semi-structured interviews.

1.5 Research Process
The study was conducted in four phases.

Phase 1
Before commencement of the peer tutoring programme itself, tutors first completed the Mathematics Dispositional Functions Inventory (MDFI). This data provided insight into the initial mathematical disposition of each tutor.

Phase 2
The second phase comprised the peer tutoring programme itself. In addition to the tutoring and preparation sessions, tutors were required to complete a reflective journal throughout the process in order to capture their personal experiences and reflections.

Phase 3
At the end of the three weeks of peer tutoring, a semi-structured interview was conducted with each peer tutor.

Phase 4
Finally, each tutor was required to complete the MDFI in order to track any potential changes in their mathematical disposition.

2 Literature Review

2.1 Introduction
The purpose of this section is to provide a theoretical and contextual backdrop to the study. Firstly, the rationale of using peer tutoring in Mathematics is discussed with specific reference to secondary school. This leads to a review of past and current research on peer tutoring with a particular emphasis on the mathematical experience of the participating tutors. In the second part of this chapter, the theoretical rationale for how peer tutoring relates to the notion of mathematical disposition is discussed. In addition, the conceptual framework of mathematical proficiency as advocated by Kilpatrick, Swafford and Findell (2001) is critically engaged with, particularly with regard to the strand of productive disposition. Finally, the notion of peer tutoring is linked to the epistemology of social constructivism.
2.2 The Rationale for Using Peer Tutoring at Secondary School Level

Topping (2005) observes that peer learning is a practice that has a long history. With this in mind it could be expected that peer teaching/tutoring should be widely incorporated into classroom practice. However, this is not the case. In my experience as a teacher of mathematics at the secondary school level, I have seen very little peer tutoring being used in the classroom despite numerous studies that reveal its potential for improving the academic performance of learners – see for example Fantuzzo, King and Heller (1992) and Fox, Vos and Geldenhuys (2007).

In order for us to explore the idea of peer tutoring meaningfully it is important firstly to understand how different academics have defined peer teaching/tutoring. Bowman-Perrot et al. (2013) define peer tutoring as “a class of practices and strategies that employs peers as one-on-one teachers to provide individualised instruction, practice, repetition, and clarification of concepts” (p. 39). Roscoe and Chi (2007) define peer tutoring as the “recruitment of one-on-one instruction for another student, accompanied by explicit assignment of participants to “tutor” and “tutee” roles” (p. 535). Fox et al. define peer tutoring simply as “learners teaching other learners” (p. 45).

Peer tutoring has the potential to facilitate peer learning, thereby providing a platform to help both the peer tutor and tutees in their learning. Topping (2005) defines peer learning as “the acquisition of knowledge and skill through active helping and supporting among status equals or matched companions” (p. 631), these being the tutors and tutees. The ‘status equals’ in this study will be Grade 10 learners – i.e. both the tutors and tutees will be in the same grade, an important aspect of the peer tutoring process (Robinson, Schofield & Steers-Wentzell, 2005). Although the study involves both tutors and tutees, the focus of the study is on how peer tutoring impacts on the peer tutors in terms of their mathematical experience.

Gordon (2009) states that there is evidence that shows that peer tutoring may not only help students to master subject knowledge and general learning skills, but also helps to increase the motivation of students by providing learners with a sense of empowerment. Peer tutoring can have positive effects on the general achievement of learners in the subjects they are studying because peer tutoring can reinforce concepts, help tutees practise their skills, support problem solving, and challenge tutees’ thinking. Peer tutoring can also have positive effects on the tutors by deepening their understanding of concepts and sharpening their skills, engaging them in creative thinking and problem solving as they look for ways and strategies to help tutees, and enhancing their self-image. This can help students in building their critical thinking skills. These views are also supported by a study carried out by Grubbs and Boes (2009) in which peer tutoring showed positive effects on the self-esteem of the tutors.

Topping (2005) states that there has been a great deal of interest in deploying helpers whose capabilities and age are nearer to those of the helped, the idea being that both the helper and the helped will find some cognitive advantage in the activities they do. In addition to the tutee or ‘helped’ being assisted, the helper, or tutor in this case, will also be “learning by teaching”. This both parties involved benefit from the experience. This makes peer tutoring ideal for students studying mathematics. The tutors, who happen to know more than the tutees, will still learn a great deal of mathematics as they prepare for and engage with the process of peer tutoring. Peer tutoring takes place within a social setting where human interactions become a key factor in facilitating learning (Chapman, 2004) and where there is high interaction between tutors and tutees. Mesler (2009) remarks that students who act as tutors could experience improved socio-emotional and attitudinal outcomes. Not only could participating tutors improve their content knowledge through taking part in a peer tutoring programme, but the experience of being a tutor also has the potential to boost self-confidence and provide a sense of being responsible for and useful to others. Through these types of interactions where tutors and tutees engage in mathematical content, it is believed that learning will take place. Ifamuyiwa and Akinsola (2008) remark that children learn independently as well as through peer collaboration. This suggests that, in learning mathematics an environment should be created during the teaching-learning process to accommodate active student interaction.
Walker (2007) asks a critical question: “How can schools - even those schools where the average mathematics performance of students is poor – build on the experiences and behaviour of successful students to spur improved mathematics outcomes?” (p. 58). One possible approach could be to engage better performing students to help their peers in a peer tutoring environment. An interesting aspect of such peer tutoring programmes is the potential influence on not only the tutees, but the participating tutors as well. Roswai et al. (1995) state that strategies using peer collaborative learning and peer tutoring show promise for reducing school dropout rates and increasing academic achievement. They further state that “peer tutoring is an effective strategy fostering academic achievement of students” (p. 276). Karsenty (2010) makes an important observation that those students who come to secondary school with a history of having struggled with mathematics often withdraw from any further efforts in trying to understand the subject content. Peer tutoring is a possible route for assisting these ‘at risk’ students.

Roscoe and Chi (2007) observe that the benefits of peer tutoring are highly inclusive, and that peer tutoring has the potential to support the learning of diverse samples of students, i.e. both academically strong and weak learners. Roscoe and Chi (2007) further observe that it is likely that tutors will always learn regardless of the subject matter they are teaching, but tutoring programmes in mathematics and science seem to show higher gains compared with other subjects.

Robinson, Schofield and Steers-Wentzell (2005) found that when students take on the role of tutor they often start to feel and behave differently. Students who take on the role of tutor often begin to mirror the role of the teacher and start developing confidence in that specific subject area. This goes some way to explaining why students who act as tutors in tutoring programmes often show positive attitudes toward school, increased academic achievement in the specific subject they are tutoring as well as in other school subjects more generally. Robinson et al. (2005) also indicate that students in tutoring programs often display improved classroom behaviour. Robinson et al.’s (2005) role theory suggests that when tutors become involved in helping tutees, this impacts on their behaviour in positive ways. Tutors become aware that they are role models for their peers. This encourages tutors to emulate good behaviour, and to expect similar behaviour from their tutees.

Mesler (2009) argues that a child who does not have self-esteem is not likely to be successful in school. In the studies she conducted she found that peer tutoring had many positive effects for both the tutor and tutees in the peer tutoring programme. Mesler’s (2009) study revealed that for the tutor, the experience of being valued and respected by tutees and the teacher had a positive outcome on the attitude and socio-emotions of the tutor. Other researchers also found that learners acting as tutors developed a better self-concept, showed improved classroom behaviour, both towards the specific subject being tutored as well as more generally. These findings echo the studies carried out by Robinson et al. (2005) where tutors were seen as role models by their peers, which in turn encouraged tutors to behave well, not only inside but also outside the classroom, what Robinson et al. (2005) refer to as the spill-over effect.

Topping (2005) reports that there is evidence to suggest that peer tutoring can yield significant gains in learners’ academic achievement. Furthermore, in peer tutoring, both tutees as well as tutors can have academic gains if the peer tutoring programmes are well organised. With this in mind, and faced with the challenge of poor mathematics results in many Namibian schools, the introduction of formal peer tutoring programmes is certainly something to be considered.

2.4 Conceptual and Theoretical Framework

2.4.1 Mathematical Disposition
The notion of mathematical disposition forms the conceptual backdrop to this study. Kilpatrick et al. (2001) characterise a productive disposition as a “habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one’s own efficacy” (p. 116) as well as a tendency “to believe that steady effort in learning mathematics pays off, and to see oneself as an effective learner and doer of
mathematics” (p. 131). Kilpatrick et al. (2001) further remark that the development of productive disposition requires “frequent opportunities to make sense of mathematics, to recognise the benefits of perseverance, and to experience the rewards of sense making in mathematics” (p. 131).

Kilpatrick et al. (2001) identify four of the five strands of mathematics proficiency as:
- Conceptual understanding – comprehension of mathematical concepts, operations, and relations
- Procedural fluency – skill in carrying out procedures flexibly, accurately, efficiently, and appropriately
- Strategic competence – ability for logical thought, reflection, explanation, and justification
- Productive disposition – habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with the belief in diligence and one’s own efficacy. (p. 116).

Studies carried out by Robinson et al. (2005) reveal that tutors sometimes show academic improvement in non-tutored subjects as well, and it is hypothesised that something other than extra instruction or practice may actually be influencing tutor outcomes. These findings are supported by a study by Mesler (2009) in which students involved in mathematical peer tutoring programmes experienced benefits in school subjects other than mathematics, the influence being attributed to higher levels of self-esteem.

Beyers (2011, 2012) developed a Mathematical Dispositional Functions Inventory (MDFI) to assess mathematical disposition with respect to these three modes or categories. The category of Cognitive is designed to assess connections and argumentation dispositional functions. The category of Affective is meant to assess the nature of mathematics, its usefulness, worthwhileness, sensibleness, as well as mathematics self-concept, attitude, and mathematics anxiety. The category of Conative assesses effort/persistence dispositional functions (Beyers, 2011).

Although the MDFI instrument was developed to measure prospective teachers’ dispositions with respect to mathematics, it can readily be adapted to assess mathematical disposition of school learners. The following table provides descriptions of the categories (and subcategories) of the dispositional functions along with a sample item as framed by Beyers (2011).

**Table 2.1 Dispositional functions based on Beyers (2011)**

<table>
<thead>
<tr>
<th>SCALE</th>
<th>SUBCATEGORY OF DISPOSITIONAL FUNCTION</th>
<th>DESCRIPTION OF SUBCATEGORY</th>
<th>SAMPLE ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive</td>
<td>Connections</td>
<td>A tendency to try and connect with or cross mathematical topics.</td>
<td>In general, I try to see how mathematical ideas in different maths classes are connected to each other.</td>
</tr>
<tr>
<td></td>
<td>Argumentations</td>
<td>A tendency to evaluate the mathematical correctness of statements, make mathematical arguments, justify mathematical statements, etc.</td>
<td>Even if I’m not asked to, I try to develop and evaluate mathematical arguments to explain things in maths classes.</td>
</tr>
<tr>
<td>Affective</td>
<td>Conative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Nature of Mathematics</strong></td>
<td>A belief about mathematics being more procedural or conceptual in nature.</td>
<td>In general, mathematics is made up of procedures and algorithms.</td>
<td></td>
</tr>
<tr>
<td><strong>Usefulness</strong></td>
<td>A belief about the usefulness of mathematics for meeting current or future needs in or out of school.</td>
<td>I need to learn maths because, if I want to be a teacher, I need maths.</td>
<td></td>
</tr>
<tr>
<td><strong>Worthwhileness</strong></td>
<td>A value judgement that the work put into learning mathematics has been worth it to the student.</td>
<td>All the work I have had to put into learning maths has been worth it to me.</td>
<td></td>
</tr>
<tr>
<td><strong>Sensibleness</strong></td>
<td>A belief that mathematics is composed of ideas that can be made sense of.</td>
<td>In general, maths is a connected system that can be made sense of.</td>
<td></td>
</tr>
<tr>
<td><strong>Mathematics Self-Concept</strong></td>
<td>What the student believes about him or herself as a learner of mathematics</td>
<td>In general, maths is too challenging for me to really understand it well.</td>
<td></td>
</tr>
<tr>
<td><strong>Attitude</strong></td>
<td>The respondent’s emotional reactions to mathematical activity in or out of school.</td>
<td>I like doing maths in school.</td>
<td></td>
</tr>
<tr>
<td><strong>Maths Anxiety</strong></td>
<td>Whether or not the student experiences anxiety in relation to mathematics.</td>
<td>In general, I get stressed out when I have to take a maths test.</td>
<td></td>
</tr>
<tr>
<td><strong>Effort/Persistence</strong></td>
<td>A tendency to persist or exert effort if necessary.</td>
<td>If someone is having difficulties in maths, they can eventually do well if they persist.</td>
<td></td>
</tr>
</tbody>
</table>

2.4.2 Social Constructivism
From a social constructivist perspective, knowledge is established as a human product, and is constructed socially and culturally. Social constructivists view learning as an inherently social process, and this speaks well for the notion of peer tutoring. Simon (1995) reminds us that constructivism derives from a philosophical view
that as human beings we have no access to an objective reality and that our constructed reality is based on the way we engage with our experiences and perceptions, i.e. the way we adapt to our experiential world. An important aspect of this engagement is the unique prior knowledge and predispositions that individual students have (Ndlovu, 2013).

McMahon (1997) remarks that learning does not take place only within an individual but rather that learning occurs when individuals are engaged in social activities, with a dynamic role being played between one learner and another, between a learner and the instructor and the assigned learning task. McMahon (1997) further states that this interaction between individuals and the learning environment in which the individual is located grants an opportunity for individuals to construct personal understanding.

Cobb, Yackel and Wood (1992) look at learning as a process in which students actively construct mathematical knowledge as they strive to make sense of their worlds. Learning in mathematics becomes a process of recognising mathematical relationships presented in instructional representations. Students learn as they interact with one another and they make meaning of the world through this interaction. Palincsar (1998) remarks that “social interactions lead to higher levels of reasoning and learning” (p. 350). Walker (2007) suggests that making mathematics a collaborative activity rather than an individual activity can be useful as individuals are able to communicate individual insight to peers when solving mathematical problems.

Ndlovu (2013) makes the important remark that for learning to be seen to have taken place, personal constructions of knowledge must be communicated, justified and accepted by the group. This notion resonates well with a peer tutoring programme as Fox et al. (2007) comment that one of the greatest advantages of peer tutoring is that learners feel comfortable asking questions of learners of their own age.

3. **Research Methodology**
   3.1 **Research Goals**
   The study investigated how a peer tutoring programme could shape the mathematical experience and mathematical disposition of the participating tutors. This was done by seeking answers to the following questions:
   1. How does peer tutoring shape the mathematical experience of the participating tutors?
   2. How does peer tutoring shape the mathematical disposition of the participating tutors?

3.2 **Research Orientation**
This study is anchored in the interpretative paradigm (Leedy & Ormrod, 2005). Cohen, Manion and Morrison (2001) state that in the interpretative paradigm the researcher begins with individuals and seeks to understand their interpretations of the world around them. This study seeks to understand the mathematical experiences of the research participants through their involvement as tutors in a peer tutoring programme. The three different data collection methods used, namely the Dispositional Functions Inventory (Beyers, 2011), reflective journals and semi-structured interviews, are all firmly rooted in the interpretive paradigm.

3.3 **Research Methodology**
A case study methodology was adopted for this study. The case under scrutiny was a group of six peer tutors, while the unit of analysis was the experiences of the tutors, with specific focus on their mathematical disposition.

The purpose of a case study is for the researcher to investigate a person, group of people or situation in great depth within their/its natural setting – in this instance a group of peer tutors within a peer tutoring environment. The study seeks to investigate how the experiences of these peer tutors could shape their mathematical disposition by taking an in-depth look at the experience of each tutor.
3.4 Research Design

The research process was conducted in four phases:

Phase 1
In the first phase learners completed the Mathematics Dispositional Functions Inventory (MDFI) (Beyers, 2011). This was carried out before the commencement of the peer tutoring programme in order to assess the mathematical disposition of the participating tutors before their experience of being part of a peer tutoring programme. The MDFI instrument was completed individually by each tutor. I was available while the MDFI was completed in case tutors needed help understanding certain questions.

Phase 2
This phase comprised the peer tutoring programme itself. There were six peer tutors in total and eighteen tutees altogether, divided randomly into six groups of three. Each of these groups was assigned a tutor. All the tutees and tutors were grade 10 learners in the same school. Each tutoring session was officially two hours long, although each session extended beyond the allocated 2-hour slot as learners would spend additional time doing mathematics after the official session was over. The peer tutoring programme took place over a period of three weeks. Two tutoring sessions were held each week – one on Tuesday and one on Thursday. The tutoring took place in a single classroom with each tutor and their tutees placed in a separate group. During the tutoring sessions tutors were allowed to share information and also get assistance from one another. I was present at each tutoring session in a non-participant capacity.

On the day before each tutoring session (i.e. Monday and Wednesday respectively) the tutors met to prepare for the upcoming tutoring session. The preparation sessions were each scheduled to last for two hours, but on many occasions went beyond the allocated time due to the interest of the learners. During these sessions the tutors, with my direction, discussed possible ways to explain the given topics to the tutees. Peer tutors were given the opportunity to share with the other peer tutors possible ways they would teach the topic to the tutees. The content chosen for the tutoring sessions was guided by the Grade 10 Mathematics syllabus and scheme of work. The content focused on Numbers and Operations (squares and square roots, cubes and cube roots, reverse operations, fractions and percentages, ratio, rate and proportion) as well as Money and Finance (utility bills, exchange rates, interest, tax, and personal finance). During the preparation sessions the tutors worked through and discussed the worksheets that their tutees would complete during the upcoming tutoring session. The tutors took turns in explaining their solution to their peers in a manner similar to what they would be doing in the actual tutoring sessions.

At the end of each tutoring session the peer tutors were required to complete a reflective journal in order to capture their personal experiences and reflections.

Phase 3
At the end of the three weeks of peer tutoring, a semi-structured interview was conducted with each peer tutor. The questions to the individual peer tutors were specifically developed based on the responses of that specific peer tutor in their reflective journal. The questions thus varied from one individual to another. The interviews were recorded and then transcribed.

Phase 4
Once each peer tutor had had a personal experience of peer tutoring, they were each required to complete the MDFI in order to track any potential changes in their mathematical disposition.
3.5 Data Collecting Techniques
Three different methods were used to collect data from each peer tutor: the MDFI (Beyers, 2011), reflective journals, and semi-structured interviews.

3.5.1 Mathematics Dispositional Functions Inventory (MDFI)
The MDFI instrument was used to assess each peer tutor’s mathematical disposition. The MDFI instrument comprises 60 forced-response items formatted on a 5-point Likert scale. These items are structured around the defining characteristics of productive disposition as conceptualised by Beyers (2011) and are summarised in Table 3.1. The MDFI instrument was completed by each peer tutor both before the commencement of the peer tutoring programme as well as on its completion. This was used to assess possible changes in the mathematical disposition of each research participant.

Table 3.1 Primary modes and subcategories of the MDFI instrument

<table>
<thead>
<tr>
<th>MODE</th>
<th>SUBCATEGORY</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Cognitive</td>
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<td></td>
<td>Sensibleness</td>
<td>A belief that mathematics is composed of ideas that can be made sense of.</td>
</tr>
<tr>
<td></td>
<td>Mathematics self-concept</td>
<td>What the learner believes about themselves as a learner of mathematics.</td>
</tr>
<tr>
<td></td>
<td>Attitude</td>
<td>The learner’s emotional reactions to mathematical activity.</td>
</tr>
<tr>
<td></td>
<td>Maths anxiety</td>
<td>Whether or not a learner expresses anxiety in relation to mathematics.</td>
</tr>
<tr>
<td>Conative</td>
<td>Diligence, effort, persistence</td>
<td>A tendency to persist or exert effort if necessary</td>
</tr>
</tbody>
</table>

(Adapted from Beyers, 2011, p. 30)

The MDFI instrument was originally designed to assess prospective teachers’ mathematical dispositions, so the wording of some of the items had to be slightly altered. Use of the MDFI instrument was granted by its developer.
3.5.2 Tutor Reflective Journals
All peer tutors were asked to keep a reflective journal for the 3-week duration of the tutoring process. Peer tutors were required to record an entry after every tutor session (including the preparation sessions). The nature of the journal was anecdotal, and tutors were encouraged to reflect informally on the ups and downs of their mathematical experience as peer-tutors.

The journal entries were structured around the following five questions:
- What were your general feelings about today’s session?
- What were some of your strong/weak points during the session?
- Can you describe how you felt about mathematics during the session?
- How did it make you feel to teach or prepare to teach your fellow learners mathematics?
- Describe one event in the session that particularly stood out for you.

3.5.3 Semi-Structured Interviews
Semi-structured interviews (Cohen et al., 2011) were used to obtain a deep understanding of the individual experiences of each peer tutor, specifically in terms of how the peer tutoring experiences shaped the mathematical experience and disposition of the participating tutors. The interviews were informed by data emanating from the MDFI instrument as well as the tutor reflective journals, the purpose of the interviews being to delve deeper into the personal experiences of each tutor.

3.6 Research Site and Participants
The study was conducted in a school located in Otjiwarongo which is in the Otjozondjupa region of Namibia. The research participants, who acted as peer tutors, comprised six Grade 10 learners selected on the basis of their mathematical proficiency. Continuous assessment marks and final examinations results were used to guide the selection of potential peer tutors. The tutees were also Grade 10 learners whose mathematical proficiency was low compared to those of peer tutors. The selection of the six participants was thus based on purposive sampling (Patton, 1990), the six peer tutors being high performers in relation to their peers.

3.7 Data analysis
3.7.1 Mathematics Dispositional Functions Inventory (MDFI)
Likert scale responses were tallied for each of the three primary modes (cognitive, affective and conative), as well as the various sub-categories, for each tutor. This data was then analysed using descriptive statistics in order to form rich profiles of each individual tutor (as well as the group of six tutors as a cohort) both prior to commencement and after completion of the peer tutoring programme. Graphs and tables were used to analyse the data.

3.7.2 Tutor Reflective Journals and Semi-Structured Interviews
Data from the reflective journals and semi-structured interviews was coded and categorised into themes aligned with the primary modes and sub-categories of the MDFI instrument as outlined in Table 3.1. Since this study seeks to investigate how a tutors’ mathematical experience and mathematical disposition can be shaped by a peer tutoring process, this qualitative data was important in providing a rich account of each tutor’s personal journey over the course of the peer-tutoring programme. Themes and categories that emerged from this data were gradually grouped to provide a rich and deep characterisation of the peer tutors’ mathematical experience and mathematical disposition during the tutoring processes.
Table 3.2 Summary of the Research Process

<table>
<thead>
<tr>
<th>PHASE</th>
<th>METHOD/TECHNIQUES</th>
<th>AIM</th>
<th>DATA</th>
<th>ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MDFI instrument</td>
<td>To assess each peer tutor’s mathematical disposition before commencement of the tutoring programme.</td>
<td>Likert scale numeric data</td>
<td>Descriptive statistics.</td>
</tr>
<tr>
<td>2</td>
<td>Tutor reflective journal</td>
<td>To capture each tutor’s lived experience of the tutoring process.</td>
<td>Qualitative data</td>
<td>Coding/Themes</td>
</tr>
<tr>
<td>3</td>
<td>Semi-Structured Interviews</td>
<td>To delve deeper into each tutor’s experience and to allow them to reflect on the process as a whole.</td>
<td>Qualitative data</td>
<td>Coding/Themes</td>
</tr>
<tr>
<td>4</td>
<td>MDFI instrument</td>
<td>To assess each peer tutor’s mathematical disposition at the end of the tutoring programme</td>
<td>Likert scale numeric data</td>
<td>Descriptive statistics.</td>
</tr>
</tbody>
</table>

3.8 Validity

The MDFI instrument that was used in this study has been tested by its developer for internal consistency for each of the three modes (cognitive, affective and conative) as well as for the instrument as a whole (Beyers, 2011). Since the MDFI instrument was originally designed to assess prospective teachers’ mathematical dispositions, the wording of some of the items had to be slightly altered, but these modifications were of such a nature that they would not affect the validity of the instrument in any way.

The semi-structured interviews were informed by the tutor reflective journals. This allowed the researcher to delve more deeply into issues arising from the reflective journals. During these interviews I allowed the research participants the opportunity to expand on or clarify specific journal entries where further explication was necessary. These interviews in part thus formed a process of member checking and thus constituted a form of external validation (Lewis & Ritchie, 2003).

4. Results, Analysis and Discussion

4.1 Phase 1 – MDFI (before commencement of peer tutoring programme)

The MDFI instrument was used to create a rich profile of each tutor prior to commencement of the peer tutoring programme.

Table 4.1 MDFI results prior to commencement of the peer tutoring programme

<table>
<thead>
<tr>
<th>TUTOR</th>
<th>TUTOR</th>
<th>TUTOR</th>
<th>TUTOR</th>
<th>TUTOR</th>
<th>TUTOR</th>
<th>MIN POSSIBLE</th>
<th>MAX POSSIBLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>0.2</td>
<td>1</td>
</tr>
<tr>
<td>COGNITIVE</td>
<td>0.62</td>
<td>0.48</td>
<td>0.66</td>
<td>0.80</td>
<td>0.64</td>
<td>0.62</td>
<td></td>
</tr>
<tr>
<td>Connections</td>
<td>0.68</td>
<td>0.52</td>
<td>0.68</td>
<td>0.72</td>
<td>0.68</td>
<td>0.64</td>
<td>0.2</td>
</tr>
<tr>
<td>Argumentation</td>
<td>0.56</td>
<td>0.44</td>
<td>0.64</td>
<td>0.88</td>
<td>0.60</td>
<td>0.60</td>
<td>0.2</td>
</tr>
<tr>
<td>AFFECTIVE</td>
<td>0.69</td>
<td>0.69</td>
<td>0.67</td>
<td>0.79</td>
<td>0.65</td>
<td>0.70</td>
<td>0.2</td>
</tr>
<tr>
<td>Nature of Mathematics</td>
<td>0.58</td>
<td>0.56</td>
<td>0.48</td>
<td>0.66</td>
<td>0.56</td>
<td>0.60</td>
<td>0.2</td>
</tr>
</tbody>
</table>
Table 4.2 provides a summary of the MDFI results for the participating tutors prior to the commencement of the peer tutoring programme. Results are shown for each of the three primary scales of cognitive, affective and conative, as well as the various subcategories. There are a number of interesting anomalies that are worth noting. In the cognitive mode, tutors 1, 3, 5 and 6 are within the same range whereas tutor 2 scored significantly lower (0.48) and tutor 4 scored significantly higher (0.80). In the affective mode, tutors 1, 2, 3, 5, and 6 all have scores between 0.65 and 0.70, whereas tutor 4 scored somewhat higher at 0.79. In the sub-domains under the affective mode there are a number of interesting anomalies. In relation to worthwhileness, tutor 5 scored 0.33 which is far lower than the other tutors. This tutor doesn't see the effort he has put into his mathematics as having been worthwhile. In terms of usefulness subcategory, all the tutors, with the exception of tutor 4, had scored close to neutral. Tutor 4 scored 0.84 which indicates that this tutor sees the usefulness of mathematics outside of the school context.

4.2 Phase 2 – Peer Tutoring Programme

This phase of the data analysis process involved repeatedly reading through the reflective journals that the tutors kept during the course of the peer tutoring programme. A number of common themes gradually emerged from the journal entries, and the various entries were coded accordingly.

The themes that emerged relate to: self-confidence, better understanding of mathematics, prospects of improving mathematics examination results, and feeling good/happy and appreciated by peers. Although these themes are presented separately it is important to acknowledge that they are nonetheless interrelated.

4.2.1 Self-Confidence

A strong theme running through the journal entries related to self-confidence. The peer tutors who participated in this study reflected in their journals that the peer tutoring programme had a positive influence on their self-confidence.

Tutor 1 for example commented that the positive emotion generated during the tutoring programme resulted in him feeling “even more confident to aim high in mathematics … and help other learners do the same” (lines 95-96). Significantly, as revealed in this particular journal entry, the self-confidence generated through the tutoring programme also manifested in a desire to help others achieve well in mathematics. Tutor 1 also reports that the tutoring sessions “made me to think outside the box and helped me to start believing that I can be good at mathematics” (lines 115-116). Although the tutoring sessions challenged this tutor to think “outside the box”, the mutually supportive environment of the tutoring and preparation sessions ensured that this was a positive and reinforcing experience. Tutor 1 also reflects that his increased self-confidence resulted in an improved sense of personal autonomy: “I realised that I can now solve mathematical problems alone without any problems” (lines 115-116).

Tutor 3 remarked that the peer tutoring programme impacted positively on her self-confidence, commenting that “every day when I come to the mathematics classes I always get confidence that is why my day was so good” (lines 316-317). Here we see the self-confidence generated through the peer tutoring programme impacting on the tutors’ affective wellbeing beyond the confines of the tutoring programme itself. Tutor 3 reveals that
compliments from tutees helped her to build her confidence: “during this session my fellow learners told me that I am the best and that gave me confidence” (lines 337-338). In addition to affective aspects, the tutor found the tutoring programme very helpful in terms of building her mathematical understanding and reinforcing her mathematical confidence.

Tutor 4 indicated that the peer tutoring programme improved her general confidence and courage, remarking that “it was good because I gained confidence in myself and my work, I also gained courage” (lines 461-462). For tutor 5 it was the process of teaching others that helped in building his confidence: “…my confidence in mathematics keeps on building because of teaching other learners” (lines 607-608). The tutor suggests in his journal that tutoring other learners impacted positively on his self-image, remarking that “just for me to be able to teach other learners made me feel strong and I am now confident that I can help other learners and in the process I am also learning” (lines 677-678). The tutor suggests that by teaching other learners, not only has his self-confidence improved, he has also improved his own mathematical understanding.

4.2.2 Better Understanding of Mathematics
All the peer tutors who participated in this programme indicated that the peer-tutoring process helped them to understand mathematics better. Tutor 2 commented that “It was very great … I understand some new things that I never understood before” (lines 163-164). With respect to the specific topic of fractions, Tutor 2 remarked that “I can now do fractions I never understood before in my life but now I understand the topic very well and I can explain to others well” (lines 156-157).

Tutor 3 makes an important point that it was the process of teaching others, and the preparation that went into it, that had the positive effect of building her own mathematical understanding: “it feels good to teach others because it helps me understand mathematics better” (lines 431-432). Tutor 5 remarks that “I felt so excellent when I was doing mathematics during the session because I know some things I did not know [previously]” (lines 584-585). What the peer tutors are advocating is that the peer tutoring process was successful in terms of improving their own mathematical understanding.

4.2.3 Prospects of Improving Mathematics Examination Results
All six tutors shared the sentiment that peer tutoring afforded them an opportunity to potentially improve their own examination results. Tutor 1 wrote that “if one wants to pass one has just to work hard and it can be done” (lines 172-173). The peer tutoring process developed in this tutor a belief that if one works hard there is a good chance of improving one’s own results. The tutor also sees the peer tutoring programme as an opportunity for doing just this. Tutor 4 expressed the following feelings: “I felt great knowing that this session will help me a lot to improve my results and [those of] my fellow learners” (line 467). The tutor acknowledges that the programme presented an opportunity not only for the tutees to improve their results but for her as a tutor to improve her own results as well. Tutor 5 sees improved results as becoming a reality: “I see that this will improve my mathematics skills very much and it will also help me in my examination. I now feel so confident in Mathematics and I feel I can get an A symbol if I work hard” (lines 602-604). Furthermore, tutor 5 commits himself to improving his mathematics, remarking that “I am willing to do my best to improve my mathematics results” (lines 632-633). Tutor 6 remarks that “this year my aim is to get high marks in mathematics” (lines 708-709). These tutors see their participation in the peer tutoring programme as having a positive impact on their drive to succeed and thus ultimately on their mathematics examination marks.

4.2.4 Feeling Good, Happy and Appreciated by Peers
All six peer tutors indicated that being a peer tutor made them feel happy and appreciated by their peers. Tutor 2 wrote in her journal that through this programme her inner feelings changed as she now feels happy and hopeful about passing mathematics. She wrote that “I am now a very happy person, I have improved in my mathematics as I passed the test we wrote and learners in my group also did well” (lines 279-280). The tutor expressed happiness to see changes in her peers “I was so happy to see how learners in my group are becoming interested in mathematics” (lines 282-283).
Tutor 3 remarked that “to teach others makes me feel good because my fellow learners try their best to do well and understand mathematics” (lines 345-346). Tutor 4 shared the following insight: “teaching my fellow learners mathematics was really great, that feeling of knowing you are sharing your knowledge with others is a most wonderful feeling” (lines 530-531).

For Tutor 5, the experience of having been a peer tutor has inspired him to consider teaching as a future career: “I have now decided to be a teacher for mathematics, I realised that helping others makes you feel good” (lines 670-671). It seems that for all tutors involved, helping other learners was a positive personal experience.

4.3 Phase 3 – Semi-Structured Interviews
The purpose of the semi-structured interviews was to probe deeper into each tutor’s personal experiences of the tutoring process. Qualitative data from these interviews was transcribed and categorised in terms of the modes and subcategories of the MDFI instrument.

4.3.1 Tutor 1
Tutor 1 commented that taking part in the peer tutoring programme had strengthened his understanding of fractions, and that this in turn had positively influenced his understanding of other mathematical domains. In his own words, his improved conceptual grasp of fractions “makes me understand more about mathematics” (lines 27-28). This suggests that the tutor was able to link the topic of fractions to other mathematical topics across the curriculum.

4.3.2 Tutor 2
Tutor 2 sees mathematics as being a part of her future career. Her view of mathematics is shaped by this outlook and she remarked that “whenever I do anything I am always thinking of my future career” (lines 54-56). Furthermore, this tutor found the peer tutoring programme helpful with respect to her projected future: “being a peer tutor myself it helped me a lot because I know that mathematics is part of my future career” (lines 47-48). This suggests that the tutor is able to see the usefulness of mathematics in her future life.

4.3.3 Tutor 3
Tutor 3 stated that “I felt great because when I teach other learners I also teach myself and I just understand better” (lines 104-105). This remark highlights an important aspect of mathematics, namely that by teaching someone else, one develops a better understanding of the subject content.

The peer tutoring experience had a positive motivating influence on Tutor 3: “I now believe that I will pass mathematics with an A symbol because I will put more effort in mathematics. Now I know mathematics is not that difficult if you put in more effort mathematics can be easy” (lines 99-102). Through participating in the tutoring programme, the tutor’s perception of mathematics has changed and she now considers it within her ability to improve her mathematics.

4.3.4 Tutor 4
Tutor 4 finds mathematics useful, and remarks that “…mathematics is something that is enjoyable and it happens in everyday life and everyone actually needs the knowledge of mathematics” (lines 154-156). Tutor 4 found the peer tutoring programme not only useful but also rewarding and worthwhile: “in teaching mathematics, I know that by doing it I am helping other learners in mathematics and I will improve in my own mathematics” (lines 143-144)

4.3.5 Tutor 5
Tutor 5 sees mathematics as being useful outside the school situation, particularly with respect to his future career: “I enjoy doing mathematics, even in my future career I am looking forward to working in the bank; I believe mathematics will help me a lot” (lines 195-196). The tutor further comments that “mathematics is the subject that you can do not only at school, even at home it can help in some activities” (lines 191-192). This tutor sees the usefulness of mathematics beyond the classroom and that it can be used in one’s daily life.
4.3.6 Tutor 6
Tutor 6 found the peer tutoring programme very helpful and comments that “it helped me a lot because some things that I did not understand I was taught by my fellow peer tutors, I was even empowered to teach other learners, even my understanding of mathematics improved” (lines 207-209). The tutor found his participation in the peer tutoring process not only of mathematical benefit, but also an empowering and enjoyable experience. The tutor also reports increased levels of mathematical confidence: “I can now understand some topics and I am now more confident in mathematics” (213-214). This increased confidence is also manifested in a more positive view of mathematics as a subject: “I now believe that this is the subject I can do” (line 232).

4.4 Phase 4 – MDFI (after conclusion of peer tutoring programme)
The MDFI instrument was used to create a rich profile of each tutor after concluding the peer-tutoring programme.

The overall results of the MDFI instrument are shown in Table 4.2

Table 4.2 MDFI results after conclusion of the peer tutoring programme

<table>
<thead>
<tr>
<th>TUTOR 1</th>
<th>TUTOR 2</th>
<th>TUTOR 3</th>
<th>TUTOR 4</th>
<th>TUTOR 5</th>
<th>TUTOR 6</th>
<th>MIN POSSIBLE</th>
<th>MAX POSSIBLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>POST</td>
<td>POST</td>
<td>POST</td>
<td>POST</td>
<td>POST</td>
<td>POST</td>
<td>POST</td>
<td>POST</td>
</tr>
<tr>
<td>COGNITIVE</td>
<td>0.72</td>
<td>0.86</td>
<td>0.78</td>
<td>0.90</td>
<td>0.74</td>
<td>0.82</td>
<td>0.2</td>
</tr>
<tr>
<td>Connections</td>
<td>0.80</td>
<td>0.84</td>
<td>0.84</td>
<td>0.92</td>
<td>0.64</td>
<td>0.80</td>
<td>0.2</td>
</tr>
<tr>
<td>Argumentation</td>
<td>0.64</td>
<td>0.88</td>
<td>0.72</td>
<td>0.88</td>
<td>0.84</td>
<td>0.84</td>
<td>0.2</td>
</tr>
<tr>
<td>AFFECTIVE</td>
<td>0.73</td>
<td>0.68</td>
<td>0.72</td>
<td>0.84</td>
<td>0.73</td>
<td>0.68</td>
<td>0.2</td>
</tr>
<tr>
<td>Nature of Mathematics</td>
<td>0.68</td>
<td>0.60</td>
<td>0.62</td>
<td>0.70</td>
<td>0.64</td>
<td>0.60</td>
<td>0.2</td>
</tr>
<tr>
<td>Usefulness</td>
<td>0.71</td>
<td>0.64</td>
<td>0.67</td>
<td>0.78</td>
<td>0.62</td>
<td>0.64</td>
<td>0.2</td>
</tr>
<tr>
<td>Worthwhileness</td>
<td>0.80</td>
<td>0.93</td>
<td>0.93</td>
<td>1.00</td>
<td>0.87</td>
<td>0.87</td>
<td>0.2</td>
</tr>
<tr>
<td>Sensibleness</td>
<td>0.65</td>
<td>0.60</td>
<td>0.70</td>
<td>0.85</td>
<td>0.70</td>
<td>0.70</td>
<td>0.2</td>
</tr>
<tr>
<td>Mathematics Self-concept</td>
<td>0.70</td>
<td>0.70</td>
<td>0.77</td>
<td>0.87</td>
<td>0.80</td>
<td>0.63</td>
<td>0.2</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.85</td>
<td>0.90</td>
<td>0.95</td>
<td>0.95</td>
<td>0.80</td>
<td>0.90</td>
<td>0.2</td>
</tr>
<tr>
<td>Maths Anxiety</td>
<td>0.80</td>
<td>0.68</td>
<td>0.68</td>
<td>1.00</td>
<td>0.96</td>
<td>0.68</td>
<td>0.2</td>
</tr>
<tr>
<td>CONATIVE</td>
<td>0.96</td>
<td>0.60</td>
<td>0.72</td>
<td>0.96</td>
<td>0.64</td>
<td>0.72</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Table 4.2 provides a summary of the MDFI results for the participating tutors after the conclusion of the peer tutoring programme. As with Table 4.1, results are shown for each of the three primary scales of cognitive, affective and conative, as well as the various subcategories. Compared with the MDFI results prior to commencement of the peer tutoring programme, all six tutors saw an increase in their cognitive mode scores, the biggest increases being those of tutor 2, whose score increased from 0.48 to 0.86, and tutor 6 whose score increased from 0.62 to 0.82. In the affective mode the overall scores suggest little change, but the subcategories show some interesting shifts. In the subcategory of worthwhileness, for example, Tutor 5 increased dramatically from 0.33 to 0.87. The conative mode saw an increase for Tutors 1 and 6, a slight decrease for Tutor 2, while the scores for Tutors 3, 4 and 5 remained relatively constant.

4.5 Discussion
In this section the two sets of MDFI results, i.e. before and after the peer-tutoring programme, are compared. This is done with supporting data obtained from the tutor reflective journals as well as the semi-structured interviews.
4.6.1 Tutor 1
4.6.1.1 Cognitive
The overall cognitive mode of Tutor 1 increased slightly from 0.62 to 0.72 Figure 4.1 shows the two subcategories for the cognitive mode both before and after the peer tutoring programme.

![Figure 4.1 Cognitive subcategories for Tutor 1](image)

Both subcategories increased slightly. The tutor’s response to Q12 (Even if I’m not asked to, I try to use various methods of reasoning in mathematics) changed from being ‘neutral’ to ‘agree’. The tutor now seems to be more open to exploring different reasoning approaches when trying to make sense of mathematics: “my strong points were changing teaching methods [i.e. different methods of explanation] that made it easy for everyone to understand” (line 105). The tutor’s response to Q53 (In general, I try to see how mathematical ideas in maths classes are connected to things outside of school) changed from ‘agree’ to ‘strongly agree’. The tutor suggests that he is now more sensitive to seeing the connections between mathematics in the classroom and mathematics outside of the classroom context.

4.6.1.2 Affective
Figure 4.2 Affective subcategories for Tutor 1

![Figure 4.2 Affective subcategories for Tutor 1](image)

Overall the affective mode increased marginally from 0.69 to 0.73. Although overall there seems to be
little change, the change in response to specific questions is revealing. The tutor’s response to Q28 (In general, maths is too challenging for me to really understand it well) changed from ‘disagree’ to ‘strongly disagree’. In other words, after the tutoring programme this tutor seems to be more confident that he can tackle the challenges of maths. This change by the tutor is supported by the sentiments he shared in the reflective journal that “I felt that now I can do maths and I am good at it” (line 121). Q35 (Ideas learned in one maths class can help you learn ideas in other maths classes) changed from ‘neither agree nor disagree’ to ‘strongly agree’ while Q45 (most mathematical ideas are related to one another) changed from ‘neither agree nor disagree’ to ‘agree’. This is a clear indication that there has been a general increase in the sense that maths is inter-related and inter-connected rather than being composed of discrete sections.

4.6.1.3 Conative
The conative mode increased from 0.84 to 0.96. Q8 (No matter how much effort some people put into learning maths, they just won’t understand it) changed from ‘neither agree nor disagree’ to ‘strongly disagree’ while Q36 (If someone is having difficulties in maths, they can eventually do well if they persist) changed from ‘agree’ to ‘strongly agree’. This suggests that this tutor experienced an increased sense of the importance of resilience with regard to engaging with mathematical problems.

4.6.2 Tutor 2
4.6.2.1 Cognitive
This tutor showed a high increase in the cognitive mode, from 0.48 to 0.86. Figure 4.3 shows the two subcategories for the cognitive mode both before and after the peer tutoring programme. The connections subcategory increased from 0.52 to 0.84. The biggest change per item response was in Q19 (When I think about mathematical ideas, I try to think about how they connect to other ideas in maths) which changed from ‘strongly disagree’ to ‘agree’. The tutor seems to be much more open to exploring and thinking about the connections in mathematics. This is corroborated by her responses to Q27 (In general, I try to see how mathematical ideas in different maths classes are connected to each other) which changed from ‘neither agree nor disagree’ to ‘agree’.

Figure 4.7 Cognitive subcategories for Tutor 2

The argumentations subcategory increased from 0.44 to 0.88. The tutor’s response to Q12 (Even if I’m not asked to, I try to use various methods of reasoning in mathematics) changed from ‘disagree’ to ‘strongly agree’. The tutor would now seem to be more open to exploring alternative solution paths when engaging with mathematical tasks. There was also a change in response to Q48 (Even if I’m not asked to, I try
to develop and evaluate mathematical arguments to explain things in maths classes), which changed from ‘disagree’ to ‘agree’. This change may well have been a result of the experience of trying to explain mathematical ideas and processes to tutees.

4.7.2.2 Affective
The overall score for the affective mode remained essentially constant, from 0.69 to 0.68. Changes in the various subcategories for the affective domain are shown in Figure 4.4.

![Figure 4.4 Affective subcategories for Tutor 2](image)

Scores for three of the subcategories increased, two decreased, and two remained the same. Interestingly though, her response to Q1 (In general, I don’t get stressed when I am doing maths in non-school situations) changed from ‘agree’ to ‘disagree’. Responses to three other questions showed an increase in perceived levels of maths anxiety, although there is no evidence from the tutor’s reflective journal that supports this change. The tutor did however occasionally express that she found some of the maths topics difficult for her. Q11 (I like doing maths in situations outside of school) changed from ‘disagree’ to ‘agree’ while Q52 (I like doing maths in school) changed from ‘neither agree nor disagree’ to ‘strongly agree’. Despite possible maths anxiety, this tutor’s responses nonetheless suggest an increased enjoyment of mathematics.

4.7.2.3 Conative
The score for the conative mode decreased from 0.76 to 0.60. Of particular interest is the change in response to Q8 (No matter how much effort some people put into learning maths, they just won’t understand it) changed from ‘strongly disagree’ to ‘agree’ as well as Q22 (If I don’t figure out something in maths pretty quickly, then I probably won’t even if I keep trying) which changed from ‘disagree’ to ‘strongly agree’. These responses resonate with the tutor’s increased levels of maths anxiety, and there may well have been incidents in the tutoring process that sparked this change, although there is no evidence of this in her reflective journal.

4.7.3 Tutor 3
4.7.3.1 Cognitive
In the cognitive mode this tutor increased from 0.66 to 0.78. Figure 4.5 shows the two subcategories for the cognitive mode both before and after the peer tutoring programme.
In terms of the individual item responses, the two biggest changes were in Q51 and Q26. The response to Q51 (In general, I try to see how mathematics ideas within a single class are connected to each other) changed from ‘strongly disagree’ to ‘agree’. This represents a significant shift and indicates that the tutor is now much more appreciative of the interconnectedness of mathematical ideas.

### 4.7.3.2 Affective
The score for the affective mode of the tutor increased marginally from 0.67 to 0.72. Figure 4.6 shows the various subcategories for this mode.

Within the affective mode, three items increased in score, two items remained the same and two items decreased. A notable change is seen Q35 (Ideas learned in one maths class can help you learn ideas in other maths classes) which changed from ‘neither agree nor disagree’ to ‘strongly agree’. This resonates with the response to Q13 (Different areas in maths that you have studied, like fractions and geometry, are not related very much) which changed from ‘agree’ to ‘disagree’. There has been a clear shift in this tutor’s view of the interconnectedness of mathematical ideas.

### 4.7.3.3 Conative
The conative mode decreased marginally from 0.76 to 0.72. There were no significant changes to individual item responses.

### 4.7.4 Tutor 4
#### 4.7.4.1 Cognitive
The cognitive mode of the tutor increased from 0.80 to 0.90. Figure 4.7 shows the two subcategories for the cognitive mode both before and after the peer tutoring programme.
4.7.4.2 Affective
Overall the affective mode increased marginally from 0.79 to 0.84. Figure 4.8 shows the various subcategories for the affective mode. There was an increase in all subcategories with the exception of usefulness which decreased slightly from 0.84 to 0.78. In those subcategories that showed increases there were no individual item responses that increased by more than a single unit, but the overall increase in the affective mode is an important indicator that the tutoring experience was beneficial for this tutor.

Figure 4.8 Affective subcategories for Tutor 4

4.7.4.3 Conative
The conative mode for this tutor remained constant at 0.96. There were no changes in any responses to individual items on the MDFI instrument.
4.7.5 Tutor 5
4.7.5.1 Cognitive
The cognitive mode for this tutor increased from 0.64 to 0.74. Figure 4.9 shows the two subcategories for the cognitive mode both before and after the peer tutoring programme.

Within the cognitive mode the subcategory of connections dropped marginally from 0.68 to 0.64 whereas the argumentation subcategory increased from 0.60 to 0.84. The most significant change in single item responses was that to Q12 (Even if I’m not asked to, I try to use various methods of reasoning in mathematics) which changed from ‘strongly disagree’ to ‘strongly agree’. The process of peer tutoring seems to have opened this tutor’s eyes to the importance of being able to reason and make sense of mathematics in different ways.

Figure 4.9 Cognitive subcategories for Tutor 5

4.7.5.2 Affective
Overall the affective mode increased from 0.65 to 0.73. Figure 4.10 shows the various subcategories for the affective mode.

Figure 4.10 Affective subcategories for Tutor 5
The tutor showed substantially improved dispositions with respect to worthwhileness and maths anxiety. The tutor’s response to Q4 (All the work I have had to put into learning maths has been worth it to me) changed from ‘disagree’ to ‘strongly agree’. The peer tutoring process was clearly an empowering and motivating experience for this tutor.

4.7.5.3 Conative
The conative mode for this tutor remained constant at 0.64.

4.7.6 Tutor 6
4.7.6.1 Cognitive
Overall the cognitive mode increased from 0.62 to 0.82. Figure 4.11 shows the various subcategories for this mode.

Figure 4.11 Cognitive subcategories for Tutor 6

Both subcategories showed improved dispositional levels. The subcategory of connections increased from 0.65 to 0.80 while that of argumentation increased from 0.60 to 0.84. The most notable changes occurred in the argumentation subcategory. The response to Q48 (Even if I’m not asked to, I try to develop and evaluate mathematics arguments to explain things in maths classes) changed from ‘disagree’ to ‘strongly agree’. The tutoring experience has had a positive effect on the degree to which this tutor tries to make use of logical reasoning and argumentation while engaging with mathematical tasks with others.

4.7.6.2 Affective
Overall the affective mode remained constant, dropping marginally from 0.70 to 0.68. Figure 4.12 shows the subcategories of the affective mode both before and after the peer tutoring process.

Figure 4.12 Affective subcategories for tutor 6

Although overall there was little change to the affective mode, there were nonetheless changes in the various subcategories. The most notable changes were increases to the subcategories of worthwhileness and sensibleness, and decreases to mathematics self-concept and maths anxiety. In terms of individual item responses to those subcategories that improved, Q25 (In general, mathematics is a connected system that can be made sense of and consequently learned) changed from ‘disagree’ to ‘agree’ while Q50 (All the work I had to put into learning mathematics in primary school was worth it to me) changed from ‘neither agree nor disagree’
to ‘strongly agree’. The tutor seems to have made important connections between primary school mathematics and that of secondary school. Nonetheless, the experience of peer tutoring seems to have negatively affected the tutor’s mathematical self-concept as well as mathematical anxiety.

4.7.6.3 Conative
The conative mode increased from 0.56 to 0.82. In Q43 (In general, if I don’t give up right away, I will eventually figure out the mathematics) changed from ‘strongly disagree’ to ‘agree’. This suggests that the tutor now sees the value of persistence and resilience in relation to tackling mathematical problems. This view is supported by the sentiments the tutor shared in his reflective journal: “I now believe that if you work hard you can understand even those difficult things” (lines 774-775).

5. Findings

Findings of the Study
The findings of this are summarised here in response to the two guiding research questions.

5.2 How does peer tutoring shape the mathematical experience of the participating tutors?
The mathematical experiences of participating tutors are summarised here in relation to emerging themes.

Self-confidence: The peer tutors who participated in this study reflected in their responses that the peer tutoring programme had a positive influence on their self-confidence. This improved self-confidence was manifested in different forms for different tutors. For one tutor the self-confidence generated through the tutoring programme was manifested in a desire to help others achieve well in mathematics. For another tutor, increased self-confidence resulted in an improved sense of personal autonomy. For most tutors, the tutoring programme was very helpful in terms of building their own mathematical understanding and reinforcing their mathematical confidence, while at the same time impacting on their affective wellbeing beyond the confines of the tutoring programme itself.

Better understanding of mathematics: The peer tutors who participated in this programme indicated that the peer tutoring process helped them improve their own mathematical understanding, highlighting that it was the process of teaching others, and the preparation that went into it, that had the positive effect of building their mathematical understanding.

Prospects of improving mathematics examination results: All six tutors shared the sentiment that peer tutoring had afforded them an opportunity to potentially improve their examination results. For some tutors there was a development in the belief that if one works hard there is a good chance of improving one’s results. The tutors saw their participation in the peer tutoring programme as having a positive impact on their drive to succeed and thus ultimately on their mathematics examination marks.

Feeling good, happy and appreciated by peers: All six peer tutors indicated that being a peer tutor made them feel happy and appreciated by their peers. For all six tutors, helping other learners was a positive personal experience. Tutor 4 summed up her feelings as follows: “teaching my fellow learners mathematics was really great, that feeling of knowing you are sharing your knowledge with others is a most wonderful feeling” (lines 530-531).

5.3 How does peer tutoring shape the mathematical disposition of the participating tutors?
The following table provides descriptions of the categories (and subcategories) of the various dispositional functions (Beyers, 2011) along with observed changes in the mathematical disposition of the group of tutors taken as a whole, as tracked by the MDFI instrument. Taking the six tutors as a group, the cognitive mode increased from 0.64 to 0.80. The affective mode increased marginally from 0.70 to 0.73, while the conative mode also showed only a marginal improvement, from 0.75 to 0.77.
### Table 5.1 Dispositional functions based on Beyers (2011)

<table>
<thead>
<tr>
<th>SCALE</th>
<th>SUBCATEGORY OF DISPOSITIONAL FUNCTION</th>
<th>DESCRIPTION OF SUBCATEGORY</th>
<th>OBSERVED CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive</td>
<td>Connections</td>
<td>A tendency to try and connect with or cross mathematical topics.</td>
<td>The average score for this subcategory increased from 0.65 to 0.81. Specifically, tutors were able to connect their understanding of fractions to ratio and proportion.</td>
</tr>
<tr>
<td></td>
<td>Argumentations</td>
<td>A tendency to evaluate the mathematical correctness of statements, make mathematical arguments, justify mathematical statements, etc.</td>
<td>The average score increased from 0.62 to 0.80. This indicates an increase in critical reasoning.</td>
</tr>
<tr>
<td>Affective</td>
<td>Nature of Mathematics</td>
<td>A belief about mathematics being more procedural or conceptual in nature.</td>
<td>The average score increased from 0.57 to 0.64, indicating a slight increase in an appreciation for the conceptual aspects of mathematics.</td>
</tr>
<tr>
<td></td>
<td>Usefulness</td>
<td>A belief about the usefulness of mathematics for meeting current or future needs in or out of school.</td>
<td>The average score increased marginally from 0.66 to 0.68.</td>
</tr>
<tr>
<td></td>
<td>Worthwhileness</td>
<td>A value judgement that the work put into learning mathematics has been worth it to the student.</td>
<td>The average score increased from 0.72 to 0.90. This represents an increased appreciation for the value of time and effort put into learning mathematics.</td>
</tr>
<tr>
<td></td>
<td>Sensibleness</td>
<td>A belief that mathematics is composed of ideas that can be made sense of.</td>
<td>The average score increased from 0.65 to 0.70, indicating a slight increase in the belief that mathematics as a subject can be made sense of.</td>
</tr>
<tr>
<td></td>
<td>Mathematics Self-Concept</td>
<td>What the student believes about him or herself as a learner of mathematics</td>
<td>The average score decreased marginally from 0.76 to 0.74.</td>
</tr>
<tr>
<td></td>
<td>Attitude</td>
<td>The respondent’s emotional reactions to mathematical activity in or out of school.</td>
<td>The average score increased marginally from 0.87 to 0.89.</td>
</tr>
<tr>
<td></td>
<td>Maths Anxiety</td>
<td>Whether or not the student experiences anxiety in relation to mathematics.</td>
<td>The average score decreased marginally from 0.83 to 0.80.</td>
</tr>
<tr>
<td>Conative</td>
<td>Effort/Persistence</td>
<td>A tendency to persist or exert effort if necessary.</td>
<td>The average score increased marginally from 0.75 to 0.77.</td>
</tr>
</tbody>
</table>
In terms of the individual tutors, all six tutors saw an improvement in the cognitive mode – the biggest increase being that of Tutor 2 from 0.48 to 0.86. In the affective mode the overall scores suggested little change, but the subcategories showed some interesting shifts. The conative mode saw an increase for Tutor 1 and 6, a slight decrease for Tutor 2, while the scores for Tutors 3, 4 and 5 remained essentially constant.

**Tutor 1** saw a change in his view of mathematics through his participation as a peer tutor. Although his own Mathematics marks were not particularly good, he commented that “when I became a peer tutor I saw that mathematics makes a lot of sense and I can do it” (lines 11-12). This reflects an important change in outlook. Mathematical self-concept has to do with what learners believe about themselves as a learner of mathematics. The peer-tutoring programme was meaningful for this tutor as it allowed him to experience a sense-making process which in turn resulted in improved learner confidence and courage.

**Tutor 2** sees mathematics as being a part of her future career, and found the peer tutoring programme helpful with respect to her projected future: “being a peer tutor myself helped me a lot because I know that mathematics is part of my future career” (lines 47-48). This suggests that the tutor is able to see the usefulness of mathematics in her future life. In addition to the mathematical usefulness of the peer tutoring experience, the tutor also appreciated the worthwhileness of the peer tutoring programme in terms of the affective domain: “for the first time in my life I felt I was doing something useful for other people” (line 62). The peer tutoring process also had an important positive effect on the general attitude of this particular tutor towards school. In her own words, “being a tutor motivated me to work hard” (lines 49-50). Interestingly, though, this particular tutor showed an increase in Maths Anxiety. This may well have been brought about by a feeling of being ‘put on the spot’ during the tutoring session itself.

**Tutor 3** found that by teaching someone else one develops a better understanding of the subject content. Through participating in the programme, this tutor’s perception of mathematics has changed and she now considers it within her ability to improve her mathematics.

**Tutor 4** acknowledged that the peer tutoring programme changed her outlook on her own mathematical ability: “before I became a tutor I used to see mathematics as a difficult subject [but] when I started teaching other learners I realised that it was simple” (lines 127-128). When the tutor experienced the joy of being able to do mathematics it had a profound influence on her view of the subject and her overall mathematical disposition: “I started giving a lot of attention to mathematics on my own and doing a lot of mathematics activities from the textbook. I started spending more time doing mathematics and I fell in love with mathematics” (lines 136-139).

**Tutor 5** saw value in the peer tutoring experience and remarked that “the more you are teaching others the more you learn and make them understand what you are teaching helps you understand mathematics better and it really made me proud” (lines 182-184). The peer tutoring experience was not only useful for this tutor in terms of his own mathematical understanding, but also in terms of important affective aspects. The anxiety levels experienced by this tutor also seem to have improved: “now I find mathematics very easy and writing a test would not stress me up” (line 199).

**Tutor 6** found his participation in the peer tutoring process not only of mathematical benefit, but also an empowering and enjoyable experience. The tutor also reports increased levels of mathematical confidence: “I can now understand some topics and I am now more confident in mathematics” (213-214). This increased confidence is also manifested in a more positive view of mathematics as a subject: “I now believe that this is the subject I can do” (line 232). Interestingly, as with Tutor 2, this particular tutor also showed an increase in Maths Anxiety. This may well have been brought about by the added pressure of having to make sense of the mathematical content in a limited time frame prior to the tutoring sessions.

5.5 **Significance of the Study**

This study provides findings which can help mathematics teachers with potential ways of developing important aspects of mathematical disposition in their learners. An important finding of this study is that participation in
a peer tutoring programme is likely to have a positive effect on the participating tutors with respect to their own mathematical confidence and understanding. The study is also important to teacher educators in the field of mathematics in relation to training student teachers on how to design peer tutoring programmes and to implement such programmes in their own schools.

5.6 Recommendations

Based on the results of this study, the following recommendations are put forward:

- Schools that are struggling with poor results in Mathematics should consider peer tutoring as a potential means of improving learner performance.
- Institutions of higher learning tasked to train teachers should include peer tutoring in their course content.
- The Ministry of Education should be encouraged to ensure that those involved in the support of mathematics teachers are aware of the potential benefits of peer tutoring programmes.

6. Conclusion

Motivating learners to develop a positive mathematics disposition requires innovative methods. The use of peer tutoring programmes represents one such approach, and the results of this study suggest that the potential benefits of a peer tutoring programme extend positively to the peer tutors themselves.

References

QUALITY ASSURANCE IN OPEN AND DISTANCE LEARNING: THE CASE OF THE CENTRE FOR EXTERNAL STUDIES (CES) AT THE UNIVERSITY OF NAMIBIA (UNAM)

Lewin, Agathe¹ and Shikongo, Regina²
1 Private Bag 13245, Windhoek, University of Namibia, alewin@unam.na
2 Private Bag 13245, Windhoek, University of Namibia, rmtshikongo@unam.na

ABSTRACT
Assuring the quality of education provision is a fundamental aspect of gaining and maintaining credibility for programmes, institutions and national systems of higher education worldwide. Despite a long and generally successful track record, open and distance learning (ODL) is still required to prove that the quality of student learning is at least equivalent to that of face-to-face teaching. A comprehensive quality assurance (QA) system can help to accomplish this (Commonwealth of Learning, 2005). Quality can be described as a characteristic of the products and services which an organisation offers, while quality assurance is the process directed towards achieving that characteristic. It is the set of activities that an organisation undertakes to ensure that standards are specified and reached consistently for a product or service (Commonwealth of Learning, 1999).

In this paper the researchers looked at various definitions of the term “quality” in the context of open and distance learning (ODL). The importance of a quality culture as well as a framework for managing and assuring quality in ODL institutions, are discussed. The researchers also identified a relevant quality assurance management framework. The quality assurance process at the Centre for External Studies (CES) at the University of Namibia (UNAM) was assessed against the identified framework. An explorative study was employed to assess the key determinants for quality assurance and it was complemented by document analysis.

The story of the Centre wanting to ensure quality assurance demonstrates its attempt to achieve quality holistically in all the components of open and distance learning (ODL).

Key words: Quality, Quality Assurance, Open and Distance Learning, Quality assurance framework

1. Introduction
According to the Commonwealth of Learning (COL) (2005), quality of education is a universal fundamental aspect of gaining and maintaining credibility for programmes, institutions and national systems of higher education. Quality has therefore become a matter of major importance for higher education institutions generally, but particularly so for institutions involved in open and distance learning (ODL) (Higher Education Council, 1997; Twigg, 2000; Western Cooperative for Educational Telecommunications, 2003 in Inglis, 2005). In general, Open and Distance Learning (ODL) has a long and successful track record in its operations, but it is still required to prove that the quality of the learning of its distance students is equivalent to that of the face-to-face students (COL, 2005). Sukati, et al (2008) states that ODL has faced an ongoing struggle to establish its credibility and legitimacy, even when its quality is good and continuous evaluation and review of the systems has been done.

Hoosen and Butcher (2012), as cited by Jung and Latchem, state that African educational policymakers and planners often hold the perception that “DE cannot offer the same quality of education as conventional face-to-face education; therefore, they are sceptical about its legitimacy and standards” (p. 48). Hoosen and Butcher (2012) further claim that, even though some institutions have developed their own Quality Assurance (QA) systems and policies, most African countries still lack policies and quality frameworks to guide the development and implementation of DE programmes at national and institutional levels.
The Southern African Development Community (SADC, 2012) also faces a lot of challenges in the provision of ODL programmes that are related to access, relevance, quality and equity. This is due to the fact that many educational institutions in the SADC region do not have ODL policies in their management systems to regulate the provision of ODL programmes.

As a result of this, more researchers are nowadays conducting studies in order to establish efficient quality assurance systems to support their educational systems, and in particular the open and distance learning systems. Namibia is no exception. The Centre for External Studies (CES), at the University of Namibia (UNAM), was ensuring the quality of distance education (DE) as per the University Quality Assurance (QA) and Management Policy. The University of Namibia is a dual mode institution, and its QA policy is safeguarded by the Centre for Quality Assurance and Management (CEQUAM). The aim of the University Quality Assurance and Management Policy is “to ensure the delivery and maintenance of excellence in instruction, learning, acquisition, research, academic and administrative / support services, student welfare, governance and community service” (UNAM, 2015, p. 4).

It is against this background that this paper deliberates the notion of quality assurance in open and distance learning with specific emphasis on the quality assurance process at the Centre for External Studies (CES), the then open and distance learning centre at the University of Namibia (UNAM). The researchers analysed the differences in meanings between various concepts such as quality, quality assurance, quality standards, quality culture and quality management frameworks as per the quality assurance dialogue, which are generally issues of concern for the provision of both the conventional face-to-face and open, distance and eLearning modes in institutions of higher learning. The study also reviewed relevant literature with the aim of focussing on key determinants for successful QA in ODL. The researchers analysed UNAM's Quality Assurance and Management Policy in relation to the key determinants as indicated in the relevant literature.

A qualitative approach and explorative study was employed to analyse the University of Namibia’s Quality Assurance and Management Policy and review literature relevant to the quality assurance process in general, but also specifically to the Centre for External Studies (CES). Document analysis was done to examine whether recommendations from previous audit reports are being implemented as per the QA policy guidelines and self-evaluation principles identified. In addition, the information in this paper is based on the knowledge, experience and observations of the two authors, who have been working in the field of open and distance learning for more than 15 years.

This paper sets out to assure all stakeholders that ODL institutions can provide quality open and distance learning and can be transformed into centres of excellence with the support of a well-crafted quality assurance and management system.

2. Objectives of the Study

The objective of this study was to analyse the notion of quality assurance in distance education, with specific emphasis on the quality assurance process at the Centre for Quality Assurance and Management (CEQUAM) at the University of Namibia (UNAM). The aims of the study were therefore to:

- analyse various relevant concepts in the quality assurance dialogue;
- review literature with the aim of focussing on key determinants for successful quality assurance in Open and Distance Learning; and
- analyse UNAM’s Quality Assurance and Management Policy, representing the quality assurance process for the then Centre for External Studies, in relation to the Quality Improvement Framework of Alistair Inglis (2005).


This study recognises that various concepts related to quality have different meanings and interpretations in different areas and situations. The researchers therefore found it necessary to clarify some relevant concepts before continuing with the discussion on the quality culture and the framework for managing and assuring quality in ODL institutions.
In general and globally, it is a difficult and complex task to define concepts such as quality and quality assurance in the context of Higher Education where institutions have broad sovereignty to decide on their own visions and missions. Therefore, quality in education means different things to different people and is perceived differently by various professional organisations, institutions, stakeholders and individuals. Ogunleye (2013: p. 49) states that “quality has to do with the standard of something when compared with other things”. He further points out that “quality in a higher education programme could thus mean the quality of (the) graduates it produces and (the) quality of (the) learning processes for which it provides”.

**Quality** is defined by COL (1999) as “a characteristic of the products and services an organisation offers”. UNAM (2015, p. 5) defines quality as “a multi-dimensional, multi-level and dynamic concept” comprising “excellence (exceptional/high standards), fitness for purpose (meeting stated purposes), fitness of purpose (adequacy of quality-related intentions of a higher education institution as aligned to the national goals of higher education), enhancement (continuous improvement), transformation (enhancing the performance of students, regardless of their initial level of competence) and value for money (return on investment in higher education)”. Ogunleye (2013, p. 50) also echoes the general definition of quality as defined by COL (1999), but further points out that there are various factors that affect quality in tertiary institutions such as “their visions, goals, talents, expertise of teaching staff, admission and assessment standards, teaching and learning environment, employability of its graduates, quality of the library and laboratories, management effectiveness, governance and leadership”. Swanepoel and Mays (2010) also note that quality is a cyclical process (continuous) and a journey; not a destination.

According to Inglis (2005) **quality assurance (QA)** is a process oriented to guarantee that the quality of a product or a service meets some predetermined standard. Kilfoil (2005, p.5) is also of the opinion that quality assurance is “a process of ensuring that the degree of excellence specified is achieved”. COL (1999) further states that an institution undertakes a set of activities to ensure that standards are specified and reached consistently for a product or service. QA aims to prove and improve the quality of the institution’s methods, products and outcomes including the development and production of learning materials, academic programmes, services and support available for Distance Education (DE) students. Therefore, it is vital for institutions to have QA systems in place to safeguard its good reputation and image (COL, 2005).

UNAM (2015, p.5) also defines QA as an ‘all-embracing concept’ that refers to an “ongoing, continuous process of evaluating (assessing, monitoring, guaranteeing, maintaining and improving) the quality of higher education systems, institutions or programs”. According to Ogunleye (2013, p. 50) “QA can also be defined as a planned and systematic review process of an institution”. Therefore, it is vital for the institutions’ policies, systems, strategies and resources to meet the quality requirements and standards in this dialogue. Globally in the QA arena there are three primary modes of quality assurance, namely assessment, audit and accreditation (COL, 2005).

**Quality standards** are defined by Beukes (2005) as “expectations of performance” that “are critical in the process of building, assuring and improving quality on a continuous basis in educational institutions”. Swanepoel and Mays (2010, p. 11) also define standard as a “means of measurement of the criteria by which quality may be judged”. Kilfoil (2005) also points out that in the United States of America (USA) ODL quality standards are no exception, therefore DE is expected to produce equivalent outcomes and meet the same standards as traditional, campus-based programmes. It is also the perception of the researchers that, at the University of Namibia, quality and quality assurance and standards in education need to be met, irrespective of the mode of delivery.

**Quality Control** is explained by UNAM (2015: p.5) as the process of quality evaluation that focuses on the internal measurement of the quality of higher education systems, institutions or programs.

As per UNAM (2015) a quality culture is a set of shared, accepted and integrated patterns of quality (principles of quality) to be found in the organisational culture and the management systems of an organisation /institution.
COL (1999: 9) also defines a ‘quality culture’ in educational terms as one that puts the interests of the learner and the facilitation of learning at the centre of its activities at every level, constantly striving to improve the effectiveness and efficiency of these activities in every way possible.

**Quality Management** Systems is also explained by UNAM (2015) as all activities that ensure fulfilment of the quality policy and quality objectives and responsibilities, and implements them through quality planning, quality control, quality assurance and quality improvement mechanisms. Ogunleye (2013, p. 50) states that quality management refers to systems which are developed to monitor all processes that are part of the work of an organisation or institution, with the aim to meet its vision, mission and strategic objectives (Ogunleye, 2013). In this paper, the terms Open, Distance and eLearning and Open, Distance Learning (ODL) are used interchangeably. ODL is generally defined as an approach to learning that focuses on freeing learners from challenges / barriers such as time, space and place, while offering flexible learning opportunities to ensure a chance of success in education and training systems (SADC, 2005; Ogunleye, 2013). Swanepoel and Mays (2010) also point out that because ODL is a systems-driven practice, cognisance has to be taken of the impact on quality across a wide range of different stakeholders’ contributions and ways in which interdependent activities affect the overall student experience.

4. **Quality Frameworks and its Key Determinants of Successful Quality Assurance in ODL Institutions**

ODL differs in numerous respects from the practices employed in face-to-face education, and the practices employed in online ODL differ from those involved in more traditional forms of ODL. Therefore, it is not appropriate to judge the quality of programs offered online by the same criteria as those used to judge the quality of programs offered face-to-face or by print-based distance education (COL, 2005).

In many ODL institutions in various countries worldwide, the quality of education, teaching and learning environment has changed drastically with the introduction of new technologies in the learning environment. However, the underlying principles of organising and managing quality in ODL, which is essentially about managing operational and academic standards, remain the same, and therefore these standards should be established, and their regular review should be ensured (COL, 2005).

Before looking at the frameworks though, the researchers found it vital to define the concept “framework” first. According to Inglis (2005, p.4) a quality framework is defined as “something that provides form and a degree of rigidity”, for example the structural integrity of a building.

Inglis (2005) also describes two types of frameworks, i.e. the the Benchmarking Framework, as described in McKinnon, Walker, and Davis (2000), and the Quality Improvement framework, as described in Inglis, Ling, and Joosten (2002). These frameworks are intended to bring structure to processes to which they are applied, and assist institutions to organise the processes that are being used in the area of quality management. They don’t completely prescribe quality processes, but they channel processes in particular directions that accord with the best practices. The Benchmarking Framework was devised for the purpose of enabling institutions to compare themselves with other institutions, while the Quality Improvement Framework is mainly used for the purpose of enabling staff within institutions to institutionalise a quality improvement ethos (Inglis, 2005). The Benchmarking framework envisages enabling Universities to deal with aspects of the roles of institutions such as research and community engagement, whereas, the Quality Improvement Framework contributes to the delivery of education and training programs. This applies in any organisation such as vocational education and training providers, professional associations and commercial training centres (Inglis, 2005; COL, 2005). Both frameworks are contextualised to the institutional situation such as functions, priorities, principles and practice indicators (Beukes, 2005).
The Benchmarking framework is grouped into nine (9) areas, covering Universities’ operations and is adopted from Inglis (2005, p.7) as follows:

- Governance, Planning and Management
- External Impact
- Finance and Physical Infrastructure
- Learning and Teaching
- Student Support
- Research
- Library and Information Services
- Internationalisation
- Staff

The Quality Improvement framework has ten (10) key principles as adopted from Inglis (2005, p. 8), as follows:

- Informed planning and management of resources
- Sustained committed leadership
- Improving access for all clients, incorporating equity, and promoting cultural diversity
- Understanding the requirements of the learner and reflecting stakeholder requirements
- Design, development and implementation of programs for effective and active learning
- Creating confident and committed staff with new competencies
- Managing and maintaining an ethical infrastructure
- Evaluating for continuous improvement
- Provision of effective and efficient administrative services
- Supporting the needs of learners

COL (2005) highlights four (4) key components of a successful quality assurance framework in ODL, namely:

- General Philosophy (refers to an organisation’s policy and mission statements, its ethos and culture, mottoes, attitudes of staff and levels of staff commitment);
- Products (cover learning materials, courses, resources, media outputs and assessment outcome);
- Services (cover issues such as registration and advisory services, tutoring, counselling, feedback and guidance on learning, support for learners’ progress, provision and management of study centres and resources) and
- Support processes (include delivery systems, record keeping, scheduling electronic backup, warehousing and stock control and quality procedures).

In the light of all the above, it is clear that the Quality Improvement Framework is best suited for use in the context of CES at UNAM.

5. The Quality Assurance Approach at UNAM – CES
After having studied the quality assurance frameworks provided in the literature, the researchers also looked at the framework currently in place at UNAM, and previously at CES (as per the Quality Assurance and Management Policy document). Against this background, the researchers identified possible areas for improvements in the current quality assurance process at UNAM, and made a few recommendations based on the literature used in the study.

The University of Namibia (UNAM) is a national educational institution, created by an Act of Parliament (Act No 18 of 1992) as a dual mode institution, providing learning opportunities for full-time and distance students. Distance students have been catered for in the Centre for External Studies (CES) since the University’s inception. CES was an academic centre of UNAM, established to ensure greater access to higher education and equity for students from various educational backgrounds. Its mission was to provide accessible quality
higher education and create opportunities for professional development to adult members of the community by providing open learning through distance and continuing education programmes. CES, as an academic centre, was responsible for the production and quality control of learning materials, distribution of materials and student administration support services.

In 2013 an intensive audit by UNAM’s Centre for Quality Assurance and Management (CEQUAM), comprising both external and internal experts, was done on CES, and the Centre was re-structured at the end of 2015. As a result of the re-structuring, both distance education and eLearning are now under the Centre for Open, Distance and e-Learning (CODeL).

Globally, centres for QA have become instrumental in designing and implementing new quality assurance mechanisms and systems in order to ensure that students receive high quality and relevant education, and that their academic qualifications are widely recognised. Such recognition is seen to be essential not only by national governments and employers but also by other universities and employers on a global scale (UNAM, 2015). It is against this background that on 01 January 2010, the University of Namibia established the Centre for Quality Assurance and Management (CEQUAM). CEQUAM aims at developing the University’s capabilities in the area of QA in order to improve and update academic and managerial activities. It is also responsible for administering and facilitating the implementation of UNAM’s Quality Assurance and Enhancement Policy and Procedures. CEQUAM’s role also includes disseminating the results of institutional audits/reviews and monitoring the implementation of the resultant recommendations.

According to CEQUAM’s Quality Assurance and Management Policy, quality assurance at UNAM comprises the policies, procedures and mechanisms according to which the University, or a specific unit or function within UNAM, ensures that specified quality specifications and standards are maintained. QA is aimed at the identification and addressing of areas of concern that could affect quality provision in the continuous cycle of planning, action, evaluation and improvement (UNAM, 2015, p.7). Quality Assurance activities at UNAM are regulated by the University’s own Quality Assurance Policy as well as the National Quality Assurance System for Higher Education under the auspices of the National Council for Higher Education (NCHE) and some provisions of the Namibia Qualifications Authority (NQA) statute (UNAM, 2015). In the section below the researchers will give an overview of the quality assurance process at the University of Namibia as per its Quality Assurance and Management Policy, but specifically in relation to the ten (10) key principles of the Quality Improvement Framework for managing quality processes in ODL, as discussed in Inglis (2005):

- **Informed planning and management of resources**

  According to the Quality Improvement Framework of Inglis (2005), the QA system of an institution should be closely linked to the overall strategic planning and management processes of the institution. Strategic planning comprises the process through which an organisation defines its strategy, or direction, and makes decisions on how it will allocate its resources to pursue this strategy. The process involves the holistic operations of the institution, including the formulation of its vision, mission, goals, objectives, criteria and standards in consultation with all its stakeholders. This means that QA should not be done in isolation, but should be integrated with the institution’s strategic plans and management processes.

  As stipulated in UNAM’s Strategic Plan: 2011 – 2015 (UNAM, 2011, p.1), the University’s mission is to strive to provide quality higher education through teaching, research, innovation and community services to its customers. It is therefore clear that the quality assurance process at UNAM is certainly linked to its strategic planning and management processes.

- **Sustained committed leadership**

  The framework also states that institutional leadership should provide unwavering support to QA processes to ensure successful implementation of the QA systems. COL (2005) recommends that a senior member of an institution be assigned to spearhead the implementation of QA processes at such
an institution. At UNAM the Pro-Vice Chancellor: Academic Affairs is the responsible executive of its Quality Assurance and Management Policy. In addition, the University Management is also responsible for driving and safeguarding the implementation of the Policy.

**Improving access for all clients, incorporating equity, and promoting cultural diversity**

The framework further states that the quality assurance system of an institution should continuously try to improve access for all students to the institution, with a fair distribution of its resources to all its students, all from a range of different cultural backgrounds (Inglis, 2005).

As mentioned before, a quality framework of an institution should generally be linked to the strategic planning process of the institution. According to UNAM’s Strategic Plan 2011 – 2015, the mandate of the University of Namibia is “to provide higher education, undertake research, advance and disseminate knowledge, to provide extension services, to encourage the growth and nurturing of cultural expressions within the context of the Namibian society, to further training and continue education, contribute to social and economic development of Namibia, and to foster relationships with any person or institution both nationally and internationally” (UNAM, 2011: p. 2). One of the initiatives under the strategic objective “Increasing access to education and facilities” also clearly states that the number of programmes on the “distance and eLearning modes” should be increased (UNAM: 2011), p. 14).

It can therefore be concluded that the quality assurance system at UNAM certainly strives to improve access for all its clients, and to promote cultural diversity.

**Understand the requirements of the learner and reflecting stakeholder requirements**

According to this principle, an institution should identify and recognise the needs of its students/learners, as well as those of its stakeholders, in order to be able to fulfil these needs satisfactorily.

In UNAM’s Strategic Plan: 2011 – 2015 (UNAM, 2011, p.10), “conducting regular stakeholder consultations” is for example listed as an initiative under the objective of “improving the relevance of programmes”.

With regard to the requirements of the learner/student, however, there is no specific mention made to learners in general, or distance learners in particular. Although the scope of the Quality Assurance and Management Policy refers to “all students registered with UNAM” (UNAM, 2015, p. 6), there is no specific reference made to distance learners in particular here. This can be viewed as a shortcoming in the Policy.

**Design, development and implementation of programmes for effective and active learning**

According to this principle in the Quality Improvement Framework of Inglis (2005), the QA system of an institution should ensure that the institution’s programmes are designed, developed and implemented in such a way that it guarantees effective and active learning.

In UNAM’s Quality Assurance and Management Policy (UNAM, 2011: p. 8) it is stated clearly that “In ensuring quality in the area of teaching and learning, UNAM is committed to continually seeking to attain the highest possible standard in respect of input resources, implementation resources, throughputs and the final outputs”. This therefore shows that this principle is catered for sufficiently in the Quality Assurance and Management Policy of the University.

**Creating confident and committed staff with new competencies**

This principle of Inglis’ Quality Improvement Framework (2005) states that staff members should be committed and confident, and in cases where working conditions change, staff members should receive training to acquire the necessary skills to carry out their daily tasks and responsibilities to the best of their ability. In order for such staff members to demonstrate these attributes and skills, they should first feel “part of the process”, meaning that they should have been consulted in the decision making process. UNAM’s Quality Assurance and Management Policy (UNAM, 2015, p.8) states that CEQUAM
is responsible for ensuring that “recommendations emanating from internal and external audits / reviews and or other platforms such as Students’ Quality Days and assessment by professional bodies” are disseminated to the relevant staff members, and “transformed into Self Improvement Plans (SIP) for implementation by the division under review”. The Centre for External Studies (CES) was audited in 2013 and its SIP was developed through a consultative process, and this was shared with all staff in the Centre (CEQUAM, 2013) to ensure effective communication. Further strategic planning was then based on this SIP, including for example, staff development activities, etc. The only limitation in this case is the fact that not all of the recommendations of the CES Self Improvement Plan were fully implemented.

Managing and maintaining the technical infrastructure
UNAM’s Quality Assurance and Management Policy (2015: p. 10) clearly stipulates that “CEQAUM, on behalf of UNAM, shall continually monitor and regularly assess the appropriateness and adequacy of support services provided to students and staff, especially in respect of adequacy and quality of …… teaching /learning infrastructure”. The Strategic Plan: 2011 – 2015 of the university (UNAM, 2011, p.19) also has a specific strategic objective to “Improve ICT and its usage”, with various initiatives on how to achieve this goal.

Evaluating for continuous improvement
Apart from the fact that the Policy Statement of UNAM’s Quality Assurance and Management Policy (UNAM, 2015: p. 6), declares that UNAM shall “constantly monitor and systematically evaluate the implementation of all its mandated activities to ensure continuous quality improvement”, the policy also indicates that UNAM, through CEQUAM has established a Monitoring, Evaluation and Implementation Committee (IMEC) to monitor and evaluate the implementation of SIPs, and thus ensure the closure of the Quality Loop and ethical issues. This principle of the Quality Improvement Framework of Inglis (2005) is therefore also sufficiently covered by UNAM’s Quality Assurance and Management Policy.

Provision of effective and efficient administrative services
UNAM’s Quality Assurance and Management Policy also clearly stipulates that “Ad hoc quality audits/reviews of UNAM academic and administrative services, activities, systems, projects and service levels will be done from time to time at the request of, and in co-operation with line managers” (UNAM: 2015, p. 11) in order to provide effective and efficient administrative services. Thus, this principle is also sufficiently catered for in the university’s quality assurance policy.

Supporting the needs of learners
Student support is central to the success of any academic programme, and particularly so in the case of distance-learning programmes in ODL institutions. UNAM’s Quality Assurance and Management Policy indicates that CEQUAM is monitoring and evaluating the “appropriateness and adequacy of support services provided to students and staff, especially in respect of adequacy and quality of academic and social counselling services, study materials, space and teaching /learning infrastructure, social amenities including health, catering, safeties, recreational and other services” (UNAM, 2015: p. 10). UNAM’s QA policy therefore does cater for support services. However, once again, no specific reference is made to distance learning students in particular.

6. Conclusion
The study started with an overview of various important concepts in the quality and quality assurance dialogue. A few quality improvement frameworks were identified and described with specific emphasis on key determinants of successful quality assurance in ODL institutions. On the basis of its scope, i.e. that it contributes to the delivery of education and training programs, in any organisation such as vocational education and training providers, professional associations and commercial training centres (Inglis, 2005; COL, 2005), the Quality Improvement Framework according to Inglis was adopted for this study. The quality assurance process at UNAM, and therefore previously in place at CES, was analysed against this Quality Improvement Framework. The study revealed that UNAM has largely successfully introduced a quality assurance system, and the University
has made considerable progress towards achieving its goals in assuring quality and quality assurance, based on the comparison with the international ODL Quality Improvement Framework by Inglis (2005). However, the University needs to strengthen its mechanisms and procedures with regard to identifying, understanding and supporting the needs of students in general, and in particular those of distance learning students. Attention should also be paid to any possible outstanding recommendations, specifically as per the Self Improvement Plan drawn up by the Centre for External Studies after its audit by CEQUAM in 2013, and these should be fully implemented.

Finally, the study concludes that quality education is an empowerment tool contributing to, and impacting sustainable livelihoods, irrespective of the mode of delivery; therefore, the University of Namibia, through CEQUAM, needs to strengthen quality assurance, mainly in the area of Open, Distance Education and eLearning, as an essential improvement component to ensure substantial transformation towards the attainment of the University’s vision and mission.

References
THE INSTRUCTOR’S LEVEL OF ENGLISH PROFICIENCY AFFECTS COMPETENCE: A CASE FOR THE VOCATIONAL EDUCATION AND TRAINING SECTOR

Fiona Anderson
(Namibia University of Science and Technology
fanderson@nust.na)

Key words: English Proficiency, Competence, accountability and professional development

Abstract - It has been noted that there are short comings with regard to the teaching standards for trainers (and teachers). For example there is no specific indicator for the teacher’s level of English proficiency, nor does it have a clear basis on which to decide whether a teacher has an acceptable level of English proficiency to model the language for students. It also does not provide firm grounds for the allocation of additional resources for professional development of teachers in an attempt to upgrade their language skills.

According to Gong (2012), Teacher professional development is an ongoing process and problems associated with it can be tackled by updating educational concepts, having a professional development plan that is set in accordance with the requirements of the vocational education system. In order to redress the past injustices that have been caused by our colonial educational system with regard to the lack of English language proficiency, I will also investigate the effect of further English language training and why it should form part of the VET trainer’s professional development interventions. Therefore, this paper seeks to investigate the current level of English proficiency of VET trainers in order to determine the impact on the quality of teaching and learning and to bring about a paradigm shift amongst VET trainers with regard to professional development and/or lifelong learning (LLL).

Introduction

Since independence in 1990, the educational system has experienced tremendous reforms in order to attain Vision 2030. According to Mabizela (2005, pp.95), to attain Vision 2030, the Vocational Education and Training (VET) system should have short and medium-term achievable goals. Mabizela (2005, pp. 95) also highlights that the current changes being implemented in the VET system of Namibia include the new Vocational Education and Training Policy (2005), improving access and equity, an NTA, CBET and making VTCs autonomous. It should be noted that the NTA and CBET are already in existence.

Competency-based education and training (CBET) was introduced in the VET system of Namibia as part of the VET Policy (2005) as cited by Mabizela (2005, pp.97). According to Mabizela (2005, pp97): ‘the VET Policy of 2005 proposed that CBET should be consistent with the general objectives of the VET system, which is a competency-based modular system, meeting the needs of formal and informal sector economy, promoting entrepreneurial skills and recognising the need for lifelong learning and continuing education.”

With this being said, CBET programs have recently gathered much attention within Namibia, given that they emphasise the explicit demonstration of student competence. Additionally, policy makers, researchers and other stakeholders are increasingly realising that large segments of Namibians are ill-served by traditional education and that competency-based education may provide a better way to increase access to education and completion. This notion of access and equity is emphasised within the Vocational Education and Training Policy of 2005.
Prior studies have been conducted with regard to the weaknesses of the VET system, including VET trainer qualifications. However, none of these studies have investigated the impact of VET trainers’ English language proficiency and the impact that it has on the competency rates of students. For example, research that was conducted by the Namibia Training Authority (2009) relates to a comparative study between the international VET instructor qualifications and our local instructor qualification which is offered by the Namibia University of Science and Technology. Our local instructor qualification (which was introduced in 2001) was benchmarked against the instructor qualifications currently registered on the National Qualifications Framework (NQF) of countries like Australia, Scotland, Botswana, Germany and South Africa. This research was aimed at identifying areas of comparability and differences that inhibit international recognition of the Namibian Instructor Qualification. It also proposes a framework for a standard qualification for VET instructors, which could form the basis for consultation and eventually for submission to the Namibia Qualifications Authority (NQA) for registration on the Namibia Qualifications Framework (NQF).

One of the concerns raised within the research (Namibia Training Authority, 2009) was that almost 20 % of these respondents considered VTC teaching staff to be unqualified and/or uncommitted to teach (Namibia Training Authority, p.6).

The research also stated that the successful implementation of any VET system is directly linked to the quality of trainers involved in the system and that it becomes essential that the VET trainers in Namibia are professionally qualified and are able to implement VET in support of the national imperatives (The Namibia Training Authority, p.7).

To conclude the research, the Namibia Training Authority (2009 proposed a new structure for the VET instructors qualifications in Namibia. This qualification should include the following aspects according to the two categories, namely Education, training and development as well as Support: (p.24)

<table>
<thead>
<tr>
<th>EDUCATION, TRAINING AND DEVELOPMENT</th>
<th>SUPPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The NQF (and impact on development in community and workplace)</td>
<td>• Operate ICT applications in the VET context.</td>
</tr>
<tr>
<td>• Work effectively in the Vocational Education and Training environment.</td>
<td>• Comply with social, ethical, legal and health requirements of ICT use in an education context.</td>
</tr>
<tr>
<td>• Understand CBET</td>
<td>• Implement and maintain a safe education and training environment.</td>
</tr>
<tr>
<td>• Maintain and enhance professional practice as a vocational trainer</td>
<td>• HIV and AIDS</td>
</tr>
<tr>
<td>• How people learn</td>
<td>• Gender equality</td>
</tr>
<tr>
<td>• Learner support</td>
<td>• First Aid</td>
</tr>
<tr>
<td>• Group dynamics</td>
<td></td>
</tr>
<tr>
<td>• Provide training through instruction and demonstration of work-related skills including coaching and mentoring.</td>
<td></td>
</tr>
<tr>
<td>• Scheduling of training and administration of training.</td>
<td></td>
</tr>
<tr>
<td>• Assessment</td>
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</tbody>
</table>

The new proposed structure for VET trainer qualifications

It should be noted that none of the revised structure for VET instructor qualification includes English language proficiency, therefore I believe that the standard and quality of education at our VTC’s might be compromised.

The findings from the Namibia Training Authority (2009)) suggest that the current Namibian instructor qualification needs to be revised in order to be aligned to the international standards. The development of
professional standards for Vocational education teachers, as suggested by University of Laos (2012) can also be beneficial to the sector.

In addition to this, teachers’ self-efficacy (the belief that a teacher has about his own perceived capability in undertaking certain teaching tasks) and pedagogical content knowledge (PCK) plays a central role in improving students’ academic learning as cited by the International Journal of Research in Humanities and Social Studies (2014), and supports the purpose of my study.

Lastly, there is a threshold proficiency level that the teacher needs to have reached in the target language in order to be able to teach effectively in English and a teacher who has not reached this level of proficiency will be more dependent on the teaching resources and less likely to be able to engage in improvisational teaching (Richard, 2011).

• Objectives

The objectives of this research include:
• to assess the current level of English proficiency of learners and VET trainers in order to determine the impact on the quality of teaching and learning.
• to identify barriers to learners’ level of competence.
• to make recommendations to redress the teaching and learning barriers within the VET sector.
• Bring about a mind-set change amongst VET trainers with regard to professional development.

During my study, I will attempt to provide answers to the following questions:

a) What impact and effect does English Language proficiency of Vocational Education (VET) trainers have on student competence?

b) How should further English language training form part of the VET trainers’ professional development?

• Significance of the Study

The significance of the study was to determine if the level of English proficiency of VET trainers had any direct impact on the quality of teaching and learning at Vocational education institutions.

There are various other factors (such as instructor qualifications) that have an impact on the quality of VET education that have been researched, but none of these studies related to the level of English proficiency of VET trainers and the impact and effect on the competence rates of learners. The current Vocational education instructor qualification for Namibia should include a level of English proficiency for VET trainers since English competency of the trainer plays a crucial role in student competence.

Apart from this, further English Language training should form part of the trainer’s professional development. By redressing the shortages of required competencies of trainers, the VET sector will be able to regain its credibility with the public and private sector.

Lastly, it is also crucial that VET trainers become accountable and therefore adopt a professional management strategy by managing their own professional development with the aim of realising the full academic potential of every VET student that advances through our Vocational Education Stream.

• Methodology

The study was conducted by using the Applied (Ex-post-facto) Quantitative research method. Through my study I intended to determine a cause-effect relationship between the English proficiency level of VET trainers and the effect and impact on competence as well as the possibility of including further English language training as part of the VET trainer’s professional development. My sample technique will be based on the probability sampling technique.
The Quantitative Research method entails various research designs, however for the purpose of my study, the most appropriate design to use is a questionnaire. The research instrument that I have used to conduct my study was a Closed Response Questionnaire with a response scale from 1-5. The reason why I have selected the Closed Response Questionnaire, was because it was a relatively cost effective method of gathering information, it was able to target a large population at a time, it is easy to administer and internal and external interferences were minimal. The questionnaire can also be completed in the participants’ own time (even though there is a questionnaire return period of one week) and therefore this does not interfere with the daily work responsibilities of the VET trainer.

The questionnaire was based on questions that related to the current Namibian instructor qualification and the relevance thereof, international trends with regard to VET trainer competencies, English proficiency and the impact on the competency of the students, VET trainer professional development and whether further language training should form part of it. Questions relating to VET trainer accountability were also included. All of the questions mentioned above helped to support and validate my study. In order to maximise on the time factor, the questionnaire was emailed to participants who had volunteered to be part of the study. A time frame of one week to respond to the questionnaire was given to participants. Even though participants used their personal email addresses to receive and send back the questionnaires, these will not be reflected anywhere (meaning who the forms came from). After all the questionnaires were returned, the data was analysed according to the Likert scale responses provided. Data was classified into the 5 categories according to the Likert scale as explained earlier. Data was represented per NTA Vocational training provider (Okakarara Vocational Training Centre, Rundu Vocational Training Centre, Zambezi Vocational Training Centre, Eenhana Vocational Training Centre, Valombola Vocational Training Centre and Nakayale Vocational Training Centre).

With regard to the population, it is the VET trainers at all NTA-owned VTCs (OVTC, RVTC, EVTC, NVTC, ZVTC and VVTC), however my sample population will consist of 43 VET trainers from all of the aforementioned NTA-owned VTCs. Occupational areas have not been considered since not all of the VTCs offer the same occupational areas.

Phase 1 of my project sought to investigate whether English language proficiency of VET trainers had an impact on the competency rates of students. It should also be noted that my study complements the research that was conducted by the Namibia Training Authority (NTA) (2009), which relates to a comparative study that was conducted between the international VET trainer qualification and our local instructor qualification which is currently being offered by the Namibia University of Science and Technology. The main aim of the research was to identify areas of comparability and difference that inhibit international recognition of the Namibian Instructor Qualification.

Several recommendations were also made in the NTA (2009) research such as the restructuring of the national qualification according to international standard and best practices. The recommendations were viable, however none of the recommendations included appraising the English language proficiency of the VET trainers. As a result of this, the quality of education that is currently offered at the VTC’s is still being compromised.

Against this background, my research seeks to investigate the impact and effect that English language proficiency of VET trainers has on student competence as well as how further English language training should form part of the VET trainer’s professional development.

Therefore, the data for phase 2 of my project was collected through questionnaires, interviews as well as document analysis. By conducting interviews, I was able to validate the data as documented within the questionnaires. The interviews also proved helpful, since it highlighted underlying perceptions of the VET trainers with regard to the factors affecting student competency rates.
Findings

Since Vocational Education and Training (VET) Trainers are the primary concern of this study, questionnaires were sent to the various vocational centres which then had to be circulated to the VET Trainers of the various occupational areas at the respective vocational training centres. Therefore, the following is a detailed account of findings as highlighted from the questionnaires. It should also be noted that certain English language instructors at the Vocational Training Centres were telephonically interviewed in order to support or oppose the views as expressed within this study. It should also be noted that the English language proficiency of VET Trainers is not assessed during interviews nor upon formal appointment and neither are they appraised against it. Against this background, this poses a problem and can therefore be regarded as a limitation of my study.

Table 1 below is an example of the questionnaire.

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>LIKERT SCALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>My line manager and I have regular career discussions.</td>
<td>1</td>
</tr>
<tr>
<td>My skills gaps are regularly analysed and identified.</td>
<td>2</td>
</tr>
<tr>
<td>I have a Personal Development Plan in place.</td>
<td>3</td>
</tr>
<tr>
<td>In my organisation I am allowed to attend training in line with my career path.</td>
<td>4</td>
</tr>
<tr>
<td>Personal development is embraced within our company.</td>
<td>5</td>
</tr>
<tr>
<td>I am encouraged to own my personal/professional development.</td>
<td>(STRONGLY DISAGREE)</td>
</tr>
<tr>
<td>My learning efforts are being rewarded through non-monetary rewards.</td>
<td>(DISAGREE)</td>
</tr>
<tr>
<td>My professional development directly affects and impacts on the quality of teaching and learning.</td>
<td>(STRONGLY AGREE)</td>
</tr>
<tr>
<td>My professional development directly affects and impacts my student competency rates.</td>
<td>(AGREE)</td>
</tr>
<tr>
<td>I see learning as a value added to the business.</td>
<td>(NEITHER AGREE NOR DISAGREE)</td>
</tr>
<tr>
<td>My company promotes ‘lifelong learning’.</td>
<td></td>
</tr>
<tr>
<td>I am allowed to implement my new knowledge and skills gained through professional development interventions back in the workplace.</td>
<td></td>
</tr>
<tr>
<td>Training department offers after training support when needed.</td>
<td></td>
</tr>
<tr>
<td>VET trainer English Language Proficiency should be of a high standard.</td>
<td></td>
</tr>
</tbody>
</table>
VET trainer English Language proficiency (how well an instructor can speak and understand English) has an impact and effect on the quality of teaching.

VET trainer English Language proficiency has an impact and effect on student competence.

English Language proficiency should form part of VET trainers' professional development.

Some of the findings included:

a) Most of the participants disagreed with the notion of their line managers discussing their professional development and assessing their skills gaps. They have also highlighted that their learning efforts are not rewarded (non-monetary). Some of the participants did not even have a professional development plan (PDP) in place and a small percentage of participants indicated that professional development is not embraced within their organisation.

b) It was interesting to note that almost all of the participants agreed/strongly agreed that they are encouraged to be lifelong learners. They also agreed that their professional development directly affects and impacts their student competency rates amongst others.

c) To support my study, Question 16 and Question 17 is very significant and it was interesting to note that most of the VET trainers either agreed or strongly agreed with what my research seeks to confirm. Only one (1) participant disagreed with Question 16.

A graphical representation of the data collected from the questionnaire is as follows:

Apart from the questionnaire, telephonic interviews were also conducted in order to validate the data of the questionnaire. It was confirmed that VET trainers are aware of the impact of English language and the effect
that it has on the quality of teaching at our national VTC’s, however no one is willing to speak openly to
address the issue, for fear of reproach or stigmatisation. At certain VTC’s, the medium of instruction is the
local vernacular, whereas students are assessed in English during their national assessments. This already
proves to be a challenge since the student is not proficient in English nor they do not possess adequate English
language proficiency, especially when they are required to translate their knowledge in written and/or spoken
form. Generally, most students are competent in written English, however to converse in English poses a
serious problem, especially since English is the language of business. If we are to conform to the demands
of industry with regard to our training standards, then English should be the first factor to consider when
determining competence at all levels of vocational education.

Conclusion and Recommendations

In conclusion, based on the evidence from the questionnaires as well as the interviews, it is clear that there is
a consensus between VET trainers with regard to English language proficiency standards and the impact that it
has on student competence. Apart from this, VET trainers have also agreed that English language proficiency
should form the basis of professional development interventions, since it will have a direct impact on the quality
of teaching and learning at the VTC’s.

As part of the recommendations, English language proficiency should be incorporated into the performance
appraisal system for VET trainers. Secondly, further in-depth studies also need to be conducted with regard
to the factors affecting the competency rates of students, apart from the English language proficiency level of
VET trainers. Only then, can one truly determine whether English proficiency is one of the major factors that
have a direct impact on the quality of teaching and learning. Lastly, English language proficiency is currently
assessed through three components, namely Reading and Directed Writing, Listening Comprehension and
Oral. In order to determine whether a student is competent, the 3 components are assessed and an average
mark is calculated. The result is given as competent (C) or not-yet-competent (NYC). Of all the 3 components,
Oral carries the least weight, however it is the most important competence since language proficiency is mainly
determined by how well an individual can converse in the target language. Against this background, it is
recommended that the 3 components (Reading and Directed Writing, Listening Comprehension and Oral)
should be assessed and graded separately and then a judgement made accordingly (competent or not-yet-
competent).

Lastly, too little research has been conducted with regard to the impact of VET trainers’ English language
proficiency and the impact on student competence, especially since, it has a ripple effect on the quality of
human capital being absorbed by industry and our international image when it comes to skills development.

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18. https://www.st-andrews.ac.uk/media/capod/students/mathssupport/Likert.pdf
AN INVESTIGATION ON MANAGEMENT AND MONITORING OF ODL SYSTEM IN BOTSWANA: THE CASE OF INSTITUTE OF DEVELOPMENT MANAGEMENT (IDM)

Marguerite Margie Serema  
1Institute of Development Management E mail: mmserema@idmbls.com,  
Cynthia Mhozya  
2Institute of Development Management E mail: cmhozya@idmbls.com

Abstract:

Management and Monitoring are critical elements in ensuring quality of distance education programmes. They provide an evidential base to establish linkages between expectations, policy, plans and implementation and between theory, research and effective classroom practice. In comparison to mainstream learning, Open and Distance Learning (ODL) is an alternative pathway of learning for people who want to learn especially for working professionals. The challenges in the management and monitoring of ODL system arise in instructional design, media production, communication, workloads, assessment and feedback. It is therefore important to assess these aspects in order to determine best practice in ODL. The aim of the paper is to investigate management and monitoring of the ODL system and its quality assurance standards in IDM, Botswana.

Keywords: Monitoring, assessment, management, best practice,

1. Introduction

Open and Distance Learning in Botswana was established on the basis that education is one of the fundamental human rights and one of the key commitments for social development; a goal for many countries including Botswana. It is indisputable that education plays a significant role in the life of everyone irrespective of gender, location, religion, ethnicity, socio-economic status and language. Moreover, getting a proper education develops the personalities of the people, provides physical and mental standards and transforms people’s living status. The role of open and distance learning in the implementation of the right to education is being described and analysed in the context of the United Nations Convention on the Rights of the child (UNCRC). The convention focusses on the open and distance education systems used in Botswana and made an assessment of whether it follows good practice. This is because one of the greatest challenges facing Botswana is that she must respond to educational needs of the children and the youth who constitute the majority of the Botswana population.

Botswana is one of the members of United Nations and is a signatory of Education for All. She is also a member of the African Union and therefore subscribes to Agenda 2063. Agenda 2063 “is an approach to how the continent should effectively learn from the lessons of the past, build on the progress now underway and strategically exploit all possible opportunities available in the immediate and medium term, so as to ensure positive socioeconomic transformation within the next 50 years” (http://agenda2063.au.int/en//vision). ODL is one of the initiatives of Agenda 2063 that Botswana must embrace in an effort to transform education. She is again a member of Southern African Development Community (SADC). The African Development Bank provided financial support for the development of the policy framework through its support to the SADC project on Capacity Building in Open and Distance Learning (SADC Regional Open and Distance Learning Policy Framework, 2012). Although this is a viable educational intervention, it has not been adequately cascaded within the education institutions especially in public
tertiary institutions in Botswana. However efforts appear to have been made at BOCODOL and the University of Botswana as opposed to IDM-Botswana which still needs improvements in policy, resources, output etc. This is despite the fact that Botswana Vision 2016 aspires to have an educated and informed nation, thus calling for institutions to ensure quality in their processes and practices. This paper argues that in order for ODL management and monitoring quality standards to be realised, there is a need to cascade international best practices into Botswana’s ODL systems. The paper examines the management and monitoring of the ODL system in Botswana and will use IDM as a case study especially as quite a number of courses in IDM have transformed to including ODL in their mode of delivery.

2. Methodology

The study is qualitative in nature and is descriptive in that the researcher reviewed the documents and records kept by the administration and consultants in IDM. The researchers used this method because this project is not just for the joy of a scientific research but to practically and deliberately inform the IDM policies and practices. The advantage of using records from the organisation is the ease of data collection. The data already exists and no additional effort is needed to collect it.

A template analysis was used to construct a road map for ODL at IDM. Template analysis is a qualitative method of data analysis; it constitutes an organisation of thematic application of material relevant to the needs of the study. In this study this analytical tool was used to organise data from a collection of literature, articles, books, and documents. It is our contention that the template for ODL management and monitoring will significantly improve ODL in IDM and that best practice should include improvements in the monitoring of the ODL system and its quality assurance standards in Botswana. We purposefully chose template analysis because it illustrates the process of recurring themes found in the literature on management and monitoring of ODL systems in Botswana. It also allows the researchers the flexibility and openness in the analysis of the documents they analyse. “One of the strengths of template analysis is that it encourages you to be explicit about the analytical decisions you make and to ground them in the texts you are analysing” [http://www.hud.ac.uk/hhs/research/template-analysis/technique/quality-and-reflexivity](http://www.hud.ac.uk/hhs/research/template-analysis/technique/quality-and-reflexivity)

3. Literature Review

Management and monitoring of (ODL) is arguably a new concept in Botswana. The literature on management and monitoring of the ODL system in Botswana has been well documented recently as compared to the past where structures were not well established. For many years the Batswana have depended on classroom face-to-face teaching. BOCODOL was created by an Act of Parliament in December 1998. Its creation marked a milestone in the development of Education for Botswana and a significant step towards realising Botswana’s Vision 2016, which emphasises the elimination of poverty through the provision of knowledge and skills. It was made by the National Commission on Education in 1993 (Recommendation number 87). This recommendation was approved by the National Assembly in April 1994 as part of the Revised National Policy on Education. Today, many tertiary institutions including the University of Botswana, Institute of Development Management and other private colleges and Universities have started offering ODL. However a number of ODL facilities in Botswana have not been successful because of a lack of management and monitoring or because of failing to ensure that all the different systems for ODL delivery were in place and functioning. As identified by SADC Regional Open and Distance Learning Policy Framework, 2012; one of the challenges of ODL is “…lack of current and relevant data for planning and monitoring.”

The current status of education in Botswana has changed drastically in that conventional programmes are no longer attractive to the market; the government of Botswana, being the major sponsor of education, is no longer supporting students in large numbers as was the case in the past; institutions
are facing financial downfall which compel them to make improvements in their programmes so as to increase access. One of these is to make delivery conducive to the needs of those who could afford to sponsor themselves, hence ODL is the best option for professionals and the working class. As Minnaar (2013) posits, historically the growth and success of distance education were fuelled by the need to increase access to learning and the availability of technology for delivery.

Most disciplines at IDM have engaged in the inclusion of both long courses and short courses with a view to consider the ODL system. The most preferred mode of delivery is the block-release type which is provided for both local and franchise courses. Some notable examples are; Bachelor of Archives and Records Management (BARM), Post Graduate Diploma in Monitoring and Evaluation (PGDME), Bachelor’s Degree in Office Management (BOM), Bachelor’s Degree in Human Resource Management (BHRM), Bachelor’s Degree in Educational Management (BEMA), University of Bolton (MSc. in Supply Chain Management, and MSc. in Project Management). It is IDM’s programme development initiative to re-look at its curricula and design attractive programmes that could match with the current status to complement the traditional type of delivery.

Generally, the challenges in the management and monitoring of an ODL system arise in instructional design, resource utilisation, and media production, and communication, availability of ODL policy, assessment and feedback. There are many more challenges affecting ODL, such as globalisation, joint course development, material sharing, computer and information technology (Watkins & Kaufman, 2003). ODL is so much more than just a teaching mode or method; it is a distinct and coherent field of education which is focused on new delivery methods with a pedagogical philosophy (Levy, 2003).

Minnar (2013) continues to say that there are no clear guidelines available to follow when planning open and distance learning in higher education, see also (Gunawardena & McIsaac, 2004). Rumble (2003) makes it clear that educators must understand that distance education may not necessarily be the best solution to their problems in education. It is the opinion of this paper that management and monitoring must be applied to education so that we may know how and when to offer ODL. Management and monitoring are essentials of quality assurance. It is also through these processes that we can obtain suitable information to improve performance in our educational systems. The premise of distance education remains unfulfilled in many education institutions in Botswana. Despite many good intentions, education institutions are still failing to recognise particular key management and monitoring steps which could make the difference in successful and sustainable Distance Education initiatives.

The Concept of ODL Management and Monitoring International Best Practices

Open and Distance Learning has traditionally been defined as instruction through print or electronic communications media to persons engaged in planned learning in a place or time entirely different from the standard, classroom based traditional instructional model. It is described in the context of the learner… as one who is physically separated from the teacher (Rumble, 1986), has a planned and guided learning experience (Holmberg, 1986), and participates in a two-way structured form of distance education that is distinct from the traditional form of classroom instruction (Keegan, 1988).

While provision is made for media and methods to cater for learners’ differences, the responsibility lies solely with the learner to ensure that learning is possible. The instructor which could be the material or manual, radio, television, occasional face-to-face interaction or any form, is mainly the facilitator. The fact that learning can take place anywhere, anytime makes ODL more relevant for adult learners and professionals since they could still learn despite being committed to their responsibilities. According to Biao (2012)…Open and distance learning was first known as “Distance Learning” before it became “Open and Distance Learning”; the concept “Distance Learning” emerged from the idea of “Distance Education” which derived from “Correspondence Education” which itself arose from “Non-formal Education”.


The context of ODL substantiates its philosophical stance and helps us to understand research that gives meaning to the system. It is understood in the light of delivery of content to learners which comprises print media, broadcasting on radio, television and video, email, telecommunication, computer conferencing to enhance learning and promote teacher-learner interaction. ODL research has shown interest in; student attrition rates, the design of instructional materials for large-scale distribution, the appropriateness of certain technologies for delivery of instruction, and the cost effectiveness of the program. AECT (2001)

ODL has experienced tremendous growth locally, regionally and internationally. The evolution of the system can be traced back from the use of print media to highly advanced technologies. During its inception the major focus was the intention, “…to battle illiteracy in developing countries, to provide training opportunities for economic growth, and to offer curriculum enrichment in non-traditional educational settings” AECT (2001)

The new developments in ODL are highly linked to influences of the current times where there is institutional, government and public pressure to increase access and reduce costs in both developed and developing countries. According to Trindade A. R. et al (2000) the situation in the United States is that there is strong competition for recruiting new students to higher education, which results in the universities having to shift from the common traditional mode to a demand for an increase in capacity. This also contributes to a high production of graduates helping in career development and curbing the scourge of unemployment worldwide. As emphasised by Wright, Dhanarajan and Reju (2009 ) “If developing countries want to maximise their investment in distance education, they should take into account those students who are likely to make the best use of this form of educational delivery system and provide effective student support.”

Taking an example of an open university as a fully integrated, dedicated ODL system, ODL is a new development in education as an alternative learning opportunity for those who are deprived of learning through the traditional/ conventional mode. So far ODL is perceived as one of the fastest growing methods of education and training in both developed and developing countries. The implementation of distance education may be impeded by limited or no experience with distance education (Gulati, 2008) cited by Wright, Dhanarajan, and Reju. They have pointed out examples of countries like Botswana and Brazil as evidence in; (a) the lack of training with the new technology and instructional methods, (b) the tension between allocating time to online course development and research, (c) increased workload, and (d) performance expectations in an unfamiliar learning and instructional environment for learner-centred and constructivist approaches.

**Botswana Context Policies and Institute of Development Management**

Various pieces of policy and legislation emerging from this ministry are of relevance to distance education and technology use. The first is a 1993 report titled Report on the National Commission on Education. The white paper resulting from this report is The Revised National Policy on Education April 1994 (Government paper No. 2 of 1994). In the full report, chapter 8 focuses on Out-of-School education and has particular relevance to distance education. Following this policy process, a paper on its implementation with regard to distance education was produced in 1994. It is titled Report of the Distance Education Seminar on Implementation of the Revised National Policy on Education. Two related pieces of legislation were passed subsequent to these policy processes and pertain to the launch of the Botswana College of Distance and Open Learning (BOCODOL):

The use of information and communications technologies (ICTs), particularly as a policy focus, is a fairly recent development in Botswana. Levels of ICT infrastructure vary from department to department. The Ministry of Education is viewed as an early starter in this regard, with other departments now starting to catch up and train their staff in computer use.

The Ministry of Education is committed to providing distance education. The following sub-sections or departments of the ministry are particularly important role players with regard to distance education and technology use:

- Department of Non-Formal Education, which is responsible for adult basic education. It originally had a distance education division, which catered for schooling. It is from this division that BOCODOL was developed.
- Department of Teacher Training and Development, which uses distance education for training its own staff and both primary and secondary school teachers.
- Department of Curriculum Development and Evaluation, which has been responsible for developing a Computer Awareness curriculum for schools.
- Besides these departments in the Education ministry the following government departments are also important contributors:
  - The Computer Bureau is the government department which is responsible for the installation, repair, and maintenance of all government computer software. This includes computers in schools, education centres, the education ministry, and para-statals like BOCODOL.

As one the public institutions in Botswana, IDM should be guided by the education policies above in its implementation of ODL. It is thus essential to examine and align its processes to the frameworks, reforms and these policies in order to adapt to changes in ODL practice. It may well be necessary to establish realistic policies that directly address the needs of learners in relation to methods and materials available for them, communication, assessment and feedback. IDM is run through a dual-mode system whereby the majority of the programmes are conventional with a few being ODL. The policies for assessment in IDM include the following; Portfolio Preparation guideline for Prior Learning Assessment; External Moderation of Examination Papers and Marking Schemes - The policy guides the responsibilities of the external moderator in dealing with examination papers - ensuring that assessment is impartially and fairly done with a standard of awards adhered to. It supports continuous improvement of the assessment process. It is used to verify assessment decisions and monitors the internal moderation process. It also verifies the achievement of the participants leading to the award of credits. All the assessment policies are applicable to the different modes of delivery used in IDM; conventional, part-time or block release.

4. **Document Analysis**

ODL differs from the standard and traditional model of learning and hence constitutes varying principles and methods in its management and monitoring. Certain elements come to play in an analysis of documents. Thematic spheres identified focus on, among others; pedagogical theories, communication, evaluation, teaching and learning environment, material development, feedback and learner support. These are critical and perceived as very important areas of concern to the researchers. While the researchers are aware that the issue of quality practice may be relative to different situations, their choice of criteria on which to judge was informed by theory, research and general contextual practice.

Amongst the documentation which the researcher used were module plans, students’ feedback forms for modules taught, course attendance forms, participants’ details update forms, assessments records, evidence of administrative support, institutional policy documents, audit reports, accreditation reports and financial records. They provide an evidential base to establish links between expectations, policy, plans and implementation, and between theory, research and effective classroom practice. The more rigorous and structured documentation are the franchise programmes rather than the local IDM ones.
The table below shows ODL programmes as well as IDM documents and records from which data was gathered. According to the study that was conducted by the SADC Capacity Building Project in Open and Distance Learning which was funded by the African Development Bank in March 2010, there are core ODL indicators that were tracked and monitored by SADC member states of which Botswana is a part. As a result of this information, the table below has drawn components for monitoring and management from the SADC framework as the basis for ODL best practice.

Table 1.1: ODL programmes in IDM and documents review

<table>
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## 5. Findings

### ODL Institutional Policy

It is clear from the literature that policies have been developed at international, regional and national levels. For example we have the SADC Regional Open and Distance Learning Policy Framework and the Botswana’s Revised National Policy on Education (RNPE). What is perhaps lacking is cascading and aligning these policies at institutional level. There is a great need to cascade these policies at institutional level. There is no ODL policy to guide the development of ODL in IDM in particular for courses that have been developed locally namely BARM, PGDME, BOM, BHRM, BEMA. The study revealed that, unlike locally developed programmes, the franchise programmes do have clear policies to guide practice. Once the policies are developed they should be reviewed from time to time to cater for changes that may occur.

All the IDM courses that are in the template are internally and externally moderated. The internal moderators consist of IDM staff which are hired as consultants. The minimum education for the consultants is a Degree but the majority of them hold a master’s degree. Although IDM has not yet introduced PhD programmes, if IDM is to continue being competitive, it is essential that staff continue to upgrade their qualifications with a view to acquiring a PHD. This is not essential now, but in future IDM may have to look into this aspect because it has implications for funding. How can consultants be funded to carry out their studies? The External Moderators are sourced from other institutions in Botswana such as the University of Botswana (UB) and Institute of Health Sciences to name but a few. External moderators from UB in particular are important, in that in their institutions they are assessed based on teaching, research and service. Moderators who do research are helpful because

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they know about issues within their field of knowledge. Something that IDM may have to consider in future is assessing its staff on research, teaching as well as service to IDM and the community.

Although the IDM programmes are fairly new, it is important that such programmes be evaluated to ensure continuous improvement. The study has revealed that not all the locally developed courses have been evaluated. It is therefore important that an evaluation of the programmes be carried out from time to time. This is not so with franchise programmes which have been evaluated. The only evaluation that was discovered during the study was the evaluation (feedback) by the course students. All the courses at the IDM are evaluated by students but, as mentioned above, there is a need to carry out thorough evaluations and not just rely on students’ feedback. Evaluation of the modules is found in different programmes, however there are inconsistencies in the way they are conducted; some are done at the end of each module. Others only at the end of the life of the programme.

**Material Development**

IDM’s development of material is based on needs assessment and feasibility studies as well as benchmarking best practice. This is done by internal as well as external consultants who are knowledgeable in their different areas of expertise. The learners do have access to the materials through their lecturer’s notes as well through Moodle. However Moodle poses challenges to learners; namely our generally poor culture in accessing information through the internet and also the lack of access to the internet in rural areas and electricity problems. Best practice indicates that increasingly in other parts of the world, distance learners receive materials electronically. Unfortunately for local programmes, a lot still needs to be done in uploading materials for learners by IDM staff to be able to reach students in their areas and send materials online. The quality of materials for franchise courses is not in doubt, but what is perhaps a glitch is that students’ feedback reports reveal that they complain that it is too much for them to handle in a short time.

In terms of the time allocation for assignments, students will always complain of short time. However, with distance learners it is sometimes understandable considering that they are engaged at their workplaces. It is therefore essential that each and every student’s case be treated on its own merit.

**Staff**

IDM has qualified staff for the conventional programmes as opposed to distance learning. There is a need to train staff on ODL philosophy and methods and also to engage staff in research on this area. ODL training will also assist staff in delivering their sessions differently from the traditional mode. ODL students need different support systems when compared to conventional programmes. This is to enable them to overcome their learning difficulties, get supplementary information, evaluate their own progress and exchange ideas with teachers, tutors and fellow students.

**Resources**

The Human Resource support includes administration, finance, marketing, IT, assessment as well as teaching. Students tend to get support from Human Resource and they are able to make arrangements on payment plans which are flexible and affordable. ICT provides students with accessing IT resources including WIFI which is available on the campus. However, the library is closed on weekends when some students have time to access library resources. IDM needs to explore the establishment of a cadre of tutors who could serve more than one programme. For instance companies in India and in many developed countries provide 24/7 online tutoring and student support services. If there is a lack of specific content expertise or the number of students does not justify hiring full-time staff for each programme, then IDM could consider collaborating on the provision of tutoring services. Collaborative efforts can address the challenge of limited resources and can be beneficial to all involved.
Program Output

For the BEMA and BHRM programmes the pass rate for final year students is available while the other programmes are still in progress. The progress rate report is not available. The completion rate reports are available except for BOM as it is new. IDM have undertaken various interventions to mitigate early attrition problems. The reasons for learner drop-outs in IDM are due to financial constraints, workplace changes such as leave days and IT challenges. Since distance education programs may suffer from low completion rates, it might be advantageous for IDM to consider who is likely to be successful with distance education courses and initially offer programs that will meet the needs of those types of students. Course attendance becomes a challenge when students do not have leave and students’ records are available for communication and support purposes.

6. Conclusions

The main conclusion of this study is that management and monitoring of ODL at IDM is a new phenomenon. For some time IDM has been used for conventional and traditional modes of teaching and learning. With the introduction of ODL there was need to create awareness of the difference between traditional and ODL systems. This should have followed the international best practice. While IDM should be applauded for establishing seven (7) ODL programmes, which is a big achievement, it is important to underscore that they are a block release. Thus we can conclude that it is a mixed method as it still emphasises a face-to-face mode and independent learning. While it will be good to achieve 100% distance learning mode, the mixed method adopted by IDM is relevant to the Botswana situation where the students’ environment is still suited to face-to-face delivery mode due to limited resources, such as a lack of electricity, IT resources, e-Learning environment and a general culture of classroom mentality. Another conclusion is that IDM’s current method of ODL will be improved to cascade international, regional and national ODL policies to its environment. There is also a need to train staff on ODL philosophy, principles and methods and to resource the ODL such that its management and monitoring can be enhanced. With the few resources that IDM has, we can conclude that IDM is on the right track towards achieving full ODL best practices.

3. Recommendations

1. The study recommends further research on the template with the aim of theory construction for ODL management and monitoring.
2. The study recommends that international, regional and national policies on ODL be cascaded and aligned with IDM standard policies. This will ensure that ODL practice is done based on a clear policy guideline which can guide quality assurance.
3. The study recommends that IDM continues to upgrade its staff to acquire postgraduate degrees including PhD so that it continues being competitive.
4. The study recommends that IDM should in future assess its staff on research, teaching and service to IDM and the community.
5. The study recommends that IDM should have evaluations of its programmes done by external consultants and should not just rely on students’ feedback.
6. The study also recommends that students’ feedback evaluation be conducted in a uniform and consistent manner across all programmes.
7. The study recommends that more training on Moodle needs to be done for students and teachers alike. For franchise courses there is a need to include material that students can handle.
8. The study recommends that more staff be trained on ODL philosophy and methods and also engage staff in research on this area.
9. The study recommends that IDM explore the establishment of a cadre of tutors who are more versatile and could serve more than one programme.
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SHADRECK BALISI AND NANCY N. LORE: OPEN AND DISTANCE LEARNING ENABLEMENT THROUGH RESOURCE MOBILISATION
OPEN AND DISTANCE LEARNING ENABLEMENT THROUGH RESOURCE MOBILISATION

Shadreck Balisi¹ and Nancy N. Lore²

¹Shadreck Balisi, Lecturer, Public Administration, Botswana College of Open and Distance Learning (BOCODOL), Private Bag BO 187, Bontleng, Gaborone, Botswana, sbalisi@staff.bocodol.ac.bw
²Nancy N. Lore, Lecturer, Banking and Finance, Botswana College of Open and Distance Learning (BOCODOL), Private Bag BO 187, Bontleng, Gaborone, Botswana, nlore@staff.bocodol.ac.bw

ABSTRACT

As the emphasis on literacy and education for all gains momentum throughout the world, the demand for Open and Distance Learning (ODL) has also increased especially with an orientation to promote life-long learning (LLL). The delivery of education through ODL methodologies needs enablers in terms of appropriate resources for it to be effective. This paper acknowledges the challenge of resource constraints faced by many ODL institutions especially institutions in poor, developing and middle income countries around the world. The paper further acknowledges the need for sufficient resources in order for ODL institutions to be effective in their operations. The main focus of this paper was therefore to look at different strategies that can be adopted to mobilise needed resources for ODL institutions. The paper used desktop research methodology and personal experience of the core author as she is a member of the resource mobilisation committee for the Botswana College of Distance and Open Learning (BOCODOL). The resource mobilisation strategies that were discussed include, Public Private Partnerships (PPP), Domestic Resource Mobilisation, Use of Business Methods, Diversification of Line of Business, Expanding the Donor Base, Involving Individuals, International Partnerships, Government Intervention, learning from NGO fund-raising strategies and other innovative resource mobilisation strategies. The paper provided a discussion of the above elements and recommended that resource mobilisation policies, national and regional ODL policies and strategies should be put in place. It further recommends the need to incorporate resource mobilisation strategies in the overall business strategy and that there should be a strong emphasis on ODL advocacy and the engagement of resource mobilisation experts.

Key Words: Open and Distance Learning, Enablement, Resource Mobilisation

Introduction

We often have good ideas, excellent written policies, programmes, organisational strategies and well-written projects but implementation is always a problem. What is often missing in institutions or organisations which hampers them from successfully implementing their policies, programmes and strategies is a lack of both organisational and workforce enablement. In an enabled institution, employees are effectively matched to positions to ensure that their skills and abilities are put to optimal use. Likewise, enabled organisations have the essential resources, information, technology, tools and equipment, human resources and financial support to get the job done. Unfortunately, most organisations are not enabled. Similarly, Open and Distance Learning (ODL) is a good initiative at least on paper, but for its implementation to be successful it needs adequate resources. The quality of outputs and outcomes in education depends largely on the quality of resources used.
Outputs and outcomes may include teaching, research, educational programmes and learning whereas inputs are the resources used. The growth of ODL institutions in developing countries is severely constrained by a lack of resources, more especially to develop the education infrastructure required for ODL institutions. This paper provides a framework for resource mobilisation that can be used by ODL institutions in order to fulfil their mandates. Amongst other initiatives, this paper discusses the following resource mobilisation strategies that are essential for enabling ODL institutions: Public Private Partnerships (PPP), Domestic Resource Mobilisation, Use of Business Methods, Diversification of Line of Business, Expanding the Donor Base, Involving Individuals, International Partnerships, Government Intervention, learning from NGO fund-raising strategies and other innovative resource mobilisation strategies. The paper provides the background, methodology used, framework of resource mobilisation, discussion, conclusions and recommendations.

Background
As a result of the efforts of both developed and developing countries to meet the Millennium Development Goals (MDGs) and subsequent Sustainable Development Goals (SDGs), there is an increasing demand for tertiary education across the world (SADC, 2013). Open and Distance Learning (ODL) has gained popularity due to the limited access to traditional face-to-face education. ODL is seen in today's modern world as an alternative to the conventional system of education. This has led to an increasing demand of ODL programmes and subsequent increase in the number of ODL institutions such as Open Universities and Colleges of Open and Distance Learning in both the public and private sectors. The demand for tertiary education continues to grow but access to both physical and human resources remains fixed (Moore & Preston, 2010). The major challenge is that ODL has not received much recognition and acceptance as a viable alternative to face-to-face education by most governments, particularly in the developing countries (Agolla, Muyambiri & Oladeji, 2011, SADC, 2013). This perception has led to governments not being committed to finance ODL education as compared to the financial assistance they extend to institutions in the conventional system of education. Thus, the growth of ODL is severely constrained due to a lack of financial, human, physical, technological resources and infrastructure (Nyaruwata, 2013:9). In order for ODL institutions to remain relevant and competitive they need to be enabled to offer quality programmes and/or services to their customers. There is a need for capacity building for ODL institutions to appropriately use open and distance learning methods and technologies more effectively to improve the access, quality and efficiency of education service delivery (SADC, 2010). This paper argues that ODL institutions can be enabled through quite a number of resource mobilisation strategies that will be discussed later in the succeeding chapters.

Methodology Used
This is a qualitative research which used desktop research methodology. The authors relied on secondary data, by using both published and unpublished materials which included but was not limited to books, journal articles, conference papers, newsletters, working papers, document analysis and personal experience of the core author. She is a member of the resource mobilisation committee for the Botswana College of Distance and Open Learning (BOCODOL). Data was analysed through conventional content analysis.

Resource Mobilisation Strategies Partnerships
Kurasha, Mupa and Chiome (2013) define a partnership as “a shared commitment where all partners have a right and an obligation to participate and will be affected equally by the benefits and disadvantages arising from the partnership.” Ahmed and Iqbal (2014) claim that for joint collaboration and meaningful partnerships in education there should exist a strong regulatory framework, flexibility in provision and good quality assurance. Institutions can enter into partnerships to mobilise resources. When an organisation enters into partnerships, both parties must sign a partnership agreement. This partnership agreement should be clear, understandable, detailed and contain no ambiguous words. The partnership agreement should show what each partner is going to contribute to the partnership. It should also show who is going to benefit and how, from the partnership. Furthermore the agreement should show the duration of the partnership. Moreover it should show who the partners are. The partnership agreement should also show what would happen at the end of the partnership. It should also address issues of how disputes will be solved if they arise in the partnership and show what will happen if partners fail to do their part in the partnership. A partnership agreement should show what type
of partnership the partners are entering into, the type of business they will be carrying out and where the partnership will be carried out. The agreement should also show who is responsible for what in the partnership. It should also show the powers and obligations of the partners in the partnership. There are different types of partnerships that an establishment can use to mobilise funds. They are as follows:

**Public Private Partnerships (PPP)**

Robertson, Mundy, Verger and Menashy (2012) define PPP as “a cooperative institutional arrangement between public and private sector actors.” According to Dewulf, Blanken and Bult-spiering (2012) in PPPs, public and private actors share costs, revenues and responsibilities. Organisations can partner with the private sector to mobilise funds for capital projects. Universities or colleges can send their learners for an apprenticeship with partner companies. Experienced staff from the private sector can offer guest lecturers to learners. Experienced staff from the private sector can be attached to the private companies. University or college employees can be attached to the private companies to gain hands-on experience. The world is dynamic, the employees will hence be abreast with the ever-evolving world. An institution can source out sponsorships for fees, special events like graduation, and graduation prizes through the partnership.

Private companies have social responsibility budgets set aside therefore universities or colleges can enter into an agreement with local private companies to be granted a portion of the social responsibility funds. They can use these funds to strengthen their budgets and dedicate these funds to carry out capital projects that are of utmost importance. As most educational institutions are government owed the private sector will see itself as giving back to society through an educational institution. Nkomo and Nhema, 2015, Nuwagaba 2013, Fombad 2013 argued that PPPs can be done through management contracts, turnkey, leasing, joint ventures and build-operate-and-transfer.

**Success Stories**

Nuwagaba (2013) claims that PPPs can fast track the economic growth of a country provided the right conditions and environment are in place. The author argues that, if handled properly, PPPs can improve service delivery. For example, in Botswana, Southern District Mongala mall in Kanye was built as a partnership between the Southern District Council and a private firm called Time Projects. Further a second mall is being built through the same arrangement in the same village. In South Africa, Inkosi Albert Luthuli Hospital, Gautrain Rapid Rail Link, Western Cape Rehabilitation Centre were PPP arrangements (Fombad 2013).

**Challenges**

According to Thomas and Olufuwa (2013) challenges affecting PPPs in higher education in Nigeria are; inadequate guidelines on how private and public sector should partner in providing higher education, inability of heads of higher institutions to relate well with private organisations in their locations, lack of awareness of any policy on public-private partnerships in higher education, lack of structures, laws monitoring and mobilising systems to enforce public-private partnership in higher education, failure of government to recognise and honour private organisations that provide infrastructure or support research activities in higher education, inadequate provision of information on the institution status and needs to the private organisations when requesting assistance, administrative bottlenecks in private sector that inhibit financial contributions and other forms of assistance, inability of higher institutions to give accounts of private organisation’s financial assistance, inability of higher institutions to approach private sector assistance and lack of financial capacity by the private sector to assist in providing higher education. The educational institutions in developing countries face most of the challenges listed above and have to be addressed.

**Partnering with other Universities/Colleges**

ODL institutions can engage with partnerships and collaborations in the areas of materials development, learner support, quality assurance systems, credit transfer and portability of qualifications, research and exchange programmes. Thorkildsen and Stein (1996) define university school partnership as “an agreement on mutually acceptable goals and objectives as well as a means of achieving them.” Patrinos (2005) defines contracting
as the process whereby a government procures education or education-related services, of a defined volume and quality, at an agreed price, from a specific provider for a specified period where the provisions between the financier and the service provider are recorded in a contract. According to Davies and Hentschke (2006) partnering can be done through networking, coordinating, cooperating and collaborating. Educational institutions can network together to improve education quality by writing materials together, thereby sharing costs of material writing. Partners will share the budget, teach the programmes together in different universities either locally, regionally or internationally and share information technology costs which will bring more customers to the institution. Johnstone et.al (2006) state that reasons of partnerships include organisations jointly offering learners’ courses that will end up as degree or certificate programmes, institutions accommodating partner’s academic programmes and institutions testing machinery from business partners. Institutions can partner with each other internationally or even locally. International institutions can sell each other’s programmes, which can be certificate, diploma, degree or postgraduate programmes.

Partners can do lecturer exchanges where lecturers are in the same field and the same faculty can pay a semester visit to a partner institution in the same area. They can also do student exchanges where students in the same program with the partner university will school for a minimum of a semester at the partner institution. These types of exchanges will enable both lecturers and students to learn about a different culture and gain more knowledge. The employees of these universities can write research papers together. People are familiar with their own environment, cultures and norms and will be welcomed more easily than a foreigner. Hence partners in different countries can write papers together, each collecting information from his/her own country on the same matter. This will make the research much cheaper to undertake.

**Partnering with the International Community**

An institution can mobilise resources by seeking international partnerships. It can partner with international organisations like USAID for collaborative research programmes. Institutions can partner with international agencies such as the African Capacity Building Foundation, Agence Francaise de Development, Australian Agency for international Development, Canadian International Development Agency, Commission for research partnership with developing countries, UNESCO and Council for environmental education among others. For example, Robertson et.al (2012) stated that UNESCO has an agreement with Microsoft that supports diversity, access, inclusion and exchange of best practice and communities of practice. The authors further state that UNESCO has produced ICT competency standards for teachers with Microsoft, Intel and Cisco and are in the process of creating a portal that connects literacy experts and educators worldwide. Hence educational institutions can partner with Microsoft through UNESCO in order to train their employees and students in information technology which is ever evolving. Its experts can link with the rest of the world through the portal. Institutions can also ask for grants and subsidies from foreign embassies in their home countries. An institution can seek donations from international foundations which support education, especially the ODL mode. An institution mobilising funds from international organisations and community should be result-oriented and would have to communicate frequently with the donors. For example, NGOs use donors most of the time to mobilise resources (Sosniecki and Fiederline, 2014).

**Domestic Resource Mobilisation**

Whiteside and Bradshaw (2014) define domestic resource mobilisation (DRM) as ‘the generation of savings from domestic resources and their allocation to socially productive investments. The authors highlight that both the private sector and public sector play an important role in domestic resource mobilisation with the public sector mobilising domestic resources through taxation and public revenue. An educational institution can use individuals to mobilise resources to carry out capital expenditures. An institution can mobilise resources locally by looking for wealthy individuals who have a passion for supporting education. These wealthy individuals can give pledges to the institutions to help it to mobilise resources to enable it to run and expand. They can further give donations and leave an inheritance to an educational institution. An institution can create an account in their name, buildings can be named after them as a way of showing appreciation for their support. An educational institution which is short of staff and even with no funds to pay and sustain new employees can use the services of retirees, technical experts or interns who are willing to offer their services for free
(acquaintances) or at minimal cost. These individuals can be given certificates of appreciation or a present as an acknowledgement of their support. They can also participate in college events such as corporate parties by delivering speeches, marketing and advertising programmes and college events. Acquaintances can be enrolled from indigenous schools, universities, domestic government offices (Sera and Beaudry, 2007). Inter departmental voluntarism can also be used by institutions to offer services in the college for example, a short courses department could solicit the services of academic staff or other officers with technical experts instead of recruiting outside staff unless there is no one with requisite skills inside the organisation. The short course department can then give some percentage of the fees that they collected to the academic department concerned in order to boost their budgets. The academic staff can in turn use the funds for research.

Success Stories
When Botswana started building the University of Botswana campus after the withdrawal of Lesotho from the University of Botswana, Lesotho and Swaziland (UBLS), it was built through individual contributions under the “motho le motho kgomo” (every person contributes a cow) campaign where every Motswana had to contribute a cow towards the building of the University Campus. Batswana contributed cows, cash and grain towards the building of the University (Mokopakgosi, 2008).

Another success story is that of Mozambique. DuPree, Winder, Prasad and Turitz (2000) stated that in early 1990 Mozambique was the poorest country in the world. The foundation for Community Development (FCD) wanted to facilitate self-reliant development in Mozambique and its objective was to rebuild local capacity and hence felt that it was important to raise funds locally from the outset. Their efforts paid off in just two years through endowment contributions, debt swap, local grants, foundations, international NGOs and the World Bank.

Use of Business Methods
Educational institutions can use business methods to raise funds. Business methods which educational institutions can use include but are not limited to bonds (e.g. corporate bonds, debentures, subordinated debentures, mortgage bonds, municipal bonds) business loans, crowfunding and debt swap. Institutions can seek the assistance of financial advisors to engage in the business methods named above.

Bonds
Keown, Martin, Petty and Scott (2004) define a bond as a type of debt or long-term promissory note issued by the borrower promising to pay its holder a pre-determined and fixed amount of interest per year. An institution can determine the amount of funds it needs to raise, it can then list a bond in the local Stock exchange. Institutions will need an expert to help them determine the bond price, bond duration, interest payments, how many times in a year it has to pay the said interest and the bond listing requirements of the Exchange. Different kinds of bonds that ODL institutions can use are as follows:

Corporate Bonds
According to Collings and Taillard (2013) corporate bonds are bonds issued by corporations to raise capital with debt. This debt is long-term with maturity of more than a year after the date of issue and these bonds are listed on the Stock Exchanges. An organisation can issue corporate bonds as a way of mobilising resources for capital expenditures as well as for operational uses. Types of corporate bonds are explained below:

1. Types of Corporate Bonds
   i. Debentures
      Brigham and Houston (2016) define a debenture as a long-term bond that is not secured by a mortgage on specific property. Debentures are simply an unsecured bond and an institution can use a debenture as a way of mobilising resources, as it doesn’t have to use its assets as collateral. Since a debenture is unsecured, investors buying it will want a high interest for them to bear the risk of a debenture.
ii. **Subordinated debentures**
Brigham and Houston (2016) define a subordinated debenture as bonds having a claim on assets only after the senior debt has been paid in full in the event of liquidation. An institution that has debts already can issue a subordinated debenture to mobilise resources but this kind of bond is highly risky and the investors will want a higher return to carry the risk.

iii. **Mortgage bonds**
With mortgage bonds, the business offers security for the bond using its assets as collateral. An institution can issue a secured bond or get a long term loan using its assets like land and buildings. The amount that an institution can get will not exceed the value of its assets hence a valuation of these assets has to be done before an institution can obtain a mortgage bond or a loan. The valuation has to be done by a professional and reputable appraiser. In the case of an educational institution getting a mortgage loan the appraiser has to be recognised by the bank. An institution can use the funds raised to carry out capital expenditures or for operational activities.

2. **Municipal Bonds**
This is a debt security issued by the state, country or government department to finance its capital expenditures. These kinds of bonds are exempt from taxes since these are government owed. These bonds carry zero default risk and hence pay a low interest. Most educational institutions are government owned and can issue municipal bonds as a way to mobilise resources. These bonds like corporate bonds are listed on the Stock Exchanges. In Botswana the government auctions government bonds through the Botswana Stock Exchange (BSE). For example, para-statals like Water Utilities Corporation (WUC) in Botswana raise funds by issuing bonds in the Botswana Stock Exchange.

a. **Business Loans**
An ODL institution can get commercial loans from building societies or development banks for venturing into another line of business. It can get a real estate loan for capital expenditures like buildings and buying machinery. It can also get an operating loan to run day-to-day activities. An institution can also get loans from government departments that offer loans. There are plenty of sources of business loans and when an institution desires to get a business loan it should consider the interest rates, the amount required, the duration of the loan and the terms and conditions of the financiers.

b. **Crow Funding**
Micic (2015) defines crow funding as a form of fundraising usually conducted over the Internet in which a large number of people pool relatively small individual contributions in order to support a specific goal. Schwienbacher and Larralde (2010) stated that crow funding is financing of a project or a venture by a group of individuals instead of by professional investors such as business angels, venture capital or banks. An institution can use crow funding as a way of mobilising resources. An institution can set up an internet page and ask for small amounts of money from individuals both locally or international and state the reason why it is mobilising such funds. An institution using crowfunding should advertise this over radio stations, televisions and newspapers. An example of crowfunding in Botswana is that used by a charitable organisation called SOS called P1-1child,-1 million campaign, where the charitable organisation is seeking a P1 donation from each individual in order to raise P1 million.

c. **Reinvesting the Funds from the Government Budget**
Since the money that comes from the government to an educational institution during the budget allocation is a lump sum and an institution will not be using all the money at once, it should reinvest the rest of the money. It can do this by buying government bonds listed on the country’s stock exchange since they carry zero default risk. They can also invest the money in mutual funds money market section. Reinvesting the money will enable an institution to earn some interest that it can use to run its day to day activities.
d. **Debt Swap**
Moye (2000) argued that a debt swap involves the voluntary exchange by a creditor with its debtor, of debt for cash, another asset or a new obligation with different repayment terms. The author highlighted that the rationale for such swaps is that debt can be acquired at a discount. An institution can rearrange its debt obligations with its creditors. The rearrangement can be done through the negotiation of new interest rates, new instalment amounts and a new payment period. There are different types of swaps, but an educational institution can use a debt-for-education swap. Cassimon, Essers and Renard (n.d) define debt-for-education swaps as the cancellation of external debt in exchange for the debtor government’s commitment to mobilise domestic resources for education spending. The history of debt swaps started with businesses. For example, Cassimon, Essers and Renard (n.d) wrote that Chile was the first country to implement an institutionalised debt-for-equity swap scheme in 1985.

UNESCO (2011) argued that in the late 1990s, with Paris Club members, France signed agreements with thirteen countries such as Mozambique and Cameroon to convert external debt into investment in a broad range of sectors including education, infrastructure, rural development, health and environment. An ODL institution can use debt-for-education swaps. An ODL institution can get into another business and issue a bond to the public through the stock exchange. With the advice of professionals, after some years it can then swap the bond for equity but in doing so, an institution should be careful not to lose the majority shareholding in its business.

**Diversification of Line of Business**
ODL institutions can mobilise resources by diversifying their line of business to reduce dependency on one source of income. This means that one business will sustain the other business. Many educational institutions like BOCODOL are government owned and have access to land as compared to private institutions. Part of the land is under-utilised or idle but is located in big villages, towns or cities that have shortages in accommodation, limited health facilities, limited shopping complexes or even shortage of transport. Institutions can make use of the available land to venture into other businesses. DuPree, Winder, Prasad and Turtitz (2000) stated that the Foundation for Higher Education (FES) in Colombia which was initially set up to generate support for the University del Valle in Cali, Colombia, diversified into another line of business that is a commercial financing company which is very successful.

**Government Intervention**
Governments should intervene to help educational institutions to mobilise resources. Governments can intervene through;

**Tax Exemptions**
Governments can offer tax exemptions to businesses and individuals supporting education as an incentive to encourage them to give more. Giving tax exemptions will even encourage others to participate, this will ensure a flow of funds in an education system.

**Taxes**
Governments can increase the tax base by creating other forms of tax with the intention of using these taxes for education. The governments can create taxes in non-essential items such as cigarette tax and plastic tax. Funds collected from these taxes can be directed towards the development of education.

**Linking with International Organisations**
Unlike individuals or organisations, Governments are known by the international community, trusted and should help the educational institutions to mobilise funds from international donors such as UNESCO, African Union and SADC. For example, governments throughout the world offer tax exemptions, collect taxes and link with international organisations on behalf of businesses and government authorities.

**Other Innovative Resource Mobilisation Strategies**
Other resource mobilisation initiatives include but are not limited to; the use of Open Educational Resources
(OERs), offering short courses at a fee, income from research and consultancies, the use of alumni to mobilise necessary resources as well as national, regional and international integration of ODL institutions.

Discussion
Adequate resources are the enabling factors in ODL delivery. The quality of products and/or services provided in distance and open learning is subject to the quality of resources used as inputs. This paper argues that ODL can be enabled through the identification, adoption and use of different resource mobilisation strategies. There is no one resource mobilisation strategy that is better than another. Strategies outlined above can be used in combination to complement each other. Resource mobilisation policies need to be put in place for ODL institutions to be successful in resource mobilisation (World Health Organisation, 2008). It is of paramount importance for organisations to have dedicated officers who are experienced in resource mobilisation. These are the officers who will help to make sure that resource mobilisation strategies are part of the overall business strategy and are given support to implement them. The overall business strategy of ODL institutions should clearly indicate the resource mobilisation strategies that will be undertaken including a dedicated budget of the same. Business Development Officers are also important in resource mobilisation endeavours because they can come up with cost-efficient measures of doing business and also help institutions in expanding their line of business. They are also experts in business processes engineering or re-engineering. Resource mobilisation is a way of building and enhancing capacity in distance and open learning education systems. SADC (2013:26) argued that “enhanced capacity should be treated as a goal in its own right, not merely as a means for achieving other development objectives and that support for capacity building should focus on three integrated dimensions of capacity which include human capacity, organisational capacity and institutional capacity.” There is an urgent need to counter the perception that ODL is an inferior form of educational provision and this can be effectively done by developing clear ODL policies and strategies. This can help governments, financial institutions and donors to buy into the idea of an ODL educational system. There is also a need to establish national, regional and international institutional collaborations in ODL delivery in order to enhance capacity building, sustainability, quality and competitiveness of ODL institutions around the world.

Conclusion and Recommendations
The challenges of resource constraints faced by many ODL institutions especially those in poor and developing countries can be mitigated by different initiatives. This paper has looked at different resource mobilisation strategies which include, but are not limited to Public Private Partnerships (PPP), Domestic Resource Mobilisation, Use of Business Methods, Diversification of Line of Business, Expanding the Donor Base, Involving Individuals, International Partnerships, Government Intervention, learning from NGO fund-raising strategies and other innovative resource mobilisation strategies which can be used to overcome the challenges of resource constraints. The paper argues that resources are an important enabling factor for ODL institutions to succeed in the delivery of their programmes. It further argues that the quality of education depends largely on the quality of the resources used as inputs and that in order for ODL institutions to remain relevant and competitive they need to offer quality products and/or services. The resource mobilisation strategies provided in this paper can be used in combination to complement each other. There is no one strategy that is superior to another. This paper further argues that for resource mobilisation initiatives to be successful, resource mobilisation policies should be put in place. There is also a need to incorporate resource mobilisation initiatives into the overall business strategy and hire resource mobilisation experts who will drive these initiatives. The paper has also identified the stereotype attached to ODL as one of the factors which compromises resource allocations to ODL institutions either by governments or donors. This then means that there is a need for a strong emphasis on ODL advocacy through national and regional ODL polices and strategies. Finally, the paper argues that there is a need to establish national, regional and international institutional collaborations in ODL delivery so as to enhance capacity building, sustainability, quality and competitiveness of ODL institutions around the world.

References
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23. SADC (2010) Finnish Cooperation Programme with SADC within the Framework of Open and Flexible Distance Learning, Final Revised Project Document
24. SADC (2013) Regional Open and Distance Learning (ODL) Strategic Plan 2012-17
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The journal of ERW and mine action, 18 (1), 38-41.


ADDENDUM
3RD OPEN DISTANCE LEARNING CONFERENCE
PRE-CONFERENCE WORKSHOP

BUILDING A CULTURE OF SHARING TO INCREASE ACCESS TO
EDUCATION AND AFFORDABLE LEARNING RESOURCES THROUGH OER

PROGRAMME
Facilitators:   Ms. Antoinette Wentworth - NUST
               Ms. Miems Louw – NAMCOL
               Mr. Steve Lilungwe

Tuesday 18 October 2016
Venue: Swakopmund Strand Hotel

8:30 – 8:45   Registration

8:45 – 9:00   Welcome
               Director NAMCOL

9:00 – 9:15   Introduction and Ice breaker
               Introduction to OER
               Value of OER to ODL
               Characteristics of OERs

9:15 – 10:30  Creative Commons & licenses
               OER Movement
               Locating and Utilising OERs

10:30 – 11:00 TEA BREAK
11:15 – 12:30 Guidelines to Institutional OER Policy Development
12:30 – 13:00 Working Session: OER Institutional Policy

13:00 – 14:00 LUNCH

14:15- 15:00 Continue with Working Session: OER Institutional Policy
15:00- 15:30 Wrap up

15:30– 15:45 Closing

Director: COLL
CONFERENCE PROGRAMME
Official Opening Ceremony
Venue: Swakopmund Strand Hotel

Day 1 (19 October 2016)

SESSION ONE
08h00-09h00: Registration of Participants
Director of Ceremonies: Mr Jan Nitschke
09h00-09h05: AU and Namibian Anthems
09h05-09h15: Scripture Reading and Prayer
Pastor Ruben Petrus, Founding President, Senior Pastor of Eagle Christian Centre
09h15-09h20: Welcoming Remarks
Mr Heroldt Murangi, Director of NAMCOL

Interlude (Swakopmund Senior Secondary School Choir)
09h25-10h00 Ministerial Address
Hon Dr Itah Kandjii-Murangi
Minister of Higher Education, Training and Innovation

INTERLUDE (SWAKOPMUND SENIOR SECONDARY SCHOOL CHOIR)
10h10-10h45 Group Photo
10h45-11h15 TEA BREAK
11H45-13H00 PLENARY SESSION 1
Chairperson: Dr Delvaline Möwes
Sub-theme: Lifelong Learning through ODL
Keynote Speaker: Prof Mpine Makoe
Topic: The future of Open Distance eLearning: Realising the 2030 sustainable development goal

Sub-theme: Lifelong Learning through ODL
Keynote Speaker: Dr Maggy Beukes-Amess
Topic: Promoting innovative activities and unlocking endless possibilities for Open, Distance and eLearning at CODEL
HOUSE KEEPING MATTERS BY ORGANISING COMMITTEE MEMBERS

13H00-14H00  LUNCH BREAK

Parallel Sessions

**Rapporteurs**

Head: Dr N Mbukusa

1. Ms Deria Van Wyk (NUST)
2. Ms Anneliese Groenewald (UNAM)
3. Ms Fiona Anderson (NUST)
4. Mr Nahum Namukwambi (NAMCOL)
5. Ms Justina Kavale (NAMCOL)
6. Mr Aveshe Munyika (NAMCOL)

**Venue:** Room 1

**Sub-theme:** Integration of ICTs in Teaching, Learning and Assessment

**Chairperson:** Mr Alberts Kulobone

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<tr>
<td>14h00-14h15</td>
<td>Boingotlo Moses</td>
<td>The experience of running online programmes at the BOCODOL</td>
<td>Botswana</td>
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<td>14h15-14h30</td>
<td>Martha Mosha</td>
<td>Learners Acceptance of Moodle at the University of Namibia: The case of Department of Information and Communication studies</td>
<td>Namibia</td>
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<td>14h30-14h45</td>
<td>Josephina Mwadhina Naboth</td>
<td>Mobile Learning Pedagogy in Supporting ODL students at the International University of Management</td>
<td>Namibia</td>
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<td>14h45-15h00</td>
<td>Hyasinta Kessy</td>
<td>Effects of Instructional Media on Learning</td>
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<td>15h15-15h30</td>
<td>Dagmar Oertel</td>
<td>Mobile Learning in Namibia – A concept for a mobile application to support German language learners in the tourism sector</td>
<td>Germany</td>
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<td>15h30-15h45</td>
<td>Madejski, Eugene (MGL)</td>
<td>Investigating into the Integration of ICTs in Teaching, Learning and Assessment: Case study of logistics and transport staff and students at the Namibia University of Science and Technology (NUST).</td>
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<td>15h45-16h00</td>
<td>Dr. Rwejuna Zacharia Reginard, and Ramadhan Rashid Singano</td>
<td>Challenges of ICT Integration among Distance Learners at the Open University of Tanzania: A case of Tanga Regional Centre</td>
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<td>16h00-16h15</td>
<td>Erkkie Haipinge and Gerhold B. Kooper</td>
<td>Promoting Reusable Learning Objects in Moodle Learning Management System Through Semantic Annotations</td>
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<td>16h15-16h30</td>
<td>Tim Kocher, Prof. Dr. Ulrike Haß, Prof. Dr. Bernhard Schröder (University of Duisburg-Essen, GER)</td>
<td>Blended learning: how online-courses improve offline-lectures</td>
<td>Germany</td>
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<td>16h30-16h45</td>
<td>Erkkie Haipinge</td>
<td>Repurposing MOOCs for local contexts: A framework for inter-institutional collaboration in the design of MOOCs for Open and Distance Learning in Namibia</td>
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<td>16H45-17H00</td>
<td>Dr. Lekopanye Tladi</td>
<td>ODL and Technology that could Enhance Sustainable Development</td>
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Venue: Room 2
Sub-theme: Lifelong Learning through ODL
Chairperson: Ms Francine Keendjele
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<td>Ms A Lewin and Dr R Shikongo</td>
<td>Quality Assurance in Open and Distance Learning: The case of the centre for</td>
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<td>Open and Distance Learning at UNAM.</td>
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<td>Fiona Anderson</td>
<td>The instructor’s level of English proficiency affects competence: A case for</td>
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<td>Cynthia Mhozya Marguerite M</td>
<td>An investigation on Management and Monitoring of ODL system in Botswana: The</td>
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<td>Michelle Maree</td>
<td>“Flipping the Classroom”: An approach to student-centred professional</td>
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<td>development of lecturing staff at the Namibia University of Science and</td>
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Venue: Room 3  
Sub-theme: Quality Management in ODL  
Chairperson: Mr Wynand Diergaardt
Venue: Room 3  
Sub-theme: Resource Mobilization in ODL and LLL  
Chairperson: Mr Wynand Diergaardt  

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<td>15h15-15h30</td>
<td>Shadreck Balisi and Nancy N Lore</td>
<td>Open and Distance Learning Enablement through Resource Mobilization</td>
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18H00-LATE: COCKTAIL EVENT  

DAY 2 (20 October 2016)  
Plenary Session  

Master of Ceremonies: Dr Maggy Beukes-Amiss  

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<td>Recap for day 1 Rapporteurs</td>
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<td>Dr Delvaline Möwes</td>
<td>ODL Innovation, Pedagogy and Technology for Sustainable Development</td>
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<td>Topic</td>
<td>Empowering learners for effective Open and Distance Learning</td>
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<td>10h30-11h00</td>
<td>TEA BREAK</td>
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<td>Integration of ICTs in Teaching, Learning and Assessment</td>
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11H45-12H30  Rapporteurs Report

12H30-13H00  Summary of Discussions and adoption of Conference Resolutions
Mr Heroldt Murangi, NOLNet Board of Trustees

13h00-14h00:  LUNCH BREAK

14H00-15H00  CLOSING CEREMONY

Director of Ceremonies: Dr Maggy Beukes-Amiss

Closing Remarks: Hon Anna Nghipondoka, Deputy Minister of the Ministry of Education, Arts and Culture
Vote of Thanks: Dr Maggy-Beukes Amis, Director of the Centre for Open, Distance and eLearning (University of Namibia)

AU and Namibian Anthems

15h00-17h30  Site Seeing

18h00-Late  GALA DINNER