

**Pan-Commonwealth Forum, 9-12 September 2019, Edinburgh, Scotland.**

**Theme: Innovations for Quality Education and Life Long Learning**

**Sub-theme: Technology**

**Title: Evaluating the Impact of using Digital Technologies to Support Open and Distance Postgraduate Learners at Botswana Open University.**

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**Abstract:**

The Purpose of this paper is to establish the benefits that Open and Distance Learning (ODL) learners derive from using Digital technologies in Open and Distance learning during the course of their study. This study looked at one specific graduate studies cohort, Masters in Education-Educational Leadership (MEDEL) programme, with reference to the different Digital technologies used to support learners and their impact. Documentary analysis was used to collate data and qualitative data was derived using internal key stakeholders such as programme administrators, technical Instructional support officers and students. The findings of this study revealed that use of digital technologies to support ODL learners enhances communication, information sharing, interactivity, reduces student isolation and increases students' interpersonal skills, student development, acquisition of soft skills such as team work and interpersonal skills. Digital Technologies help to provide a platform for access to various support materials for this programme. Communication and student engagement between tutors, programme Coordinators and learners is a necessary component in distance education. The use of bulk text messaging(SMS) allowed communication to reach large numbers of students enrolled in the programme timeously. Internet, audio, what's up, email and other social media were extensively used to interact with the students. Recommendation: BOU to increase and roll out the use of digital technologies to all programmes thus aligning delivery to its strategic goal; "a technology enhanced open University" page 20. In conclusion, the case study discusses how the different technologies used to support ODL students can potentially enhance students' communication in ways that the physical contact traditional method of support cannot. The different media are used in the different support systems such as, the Course materials subsystem and the Assessment management sub-system. Digital technologies used for this cohort enhanced the effectiveness of administering the programme, teaching and learning processes which comprise of student submission of assignments in the Moodle Platform, monitoring of students' progress, applications, admissions, registration, allocation to classes, assignments submission monitoring and evaluation of performance.

Keywords: communication, digital technologies, impact, ODL, postgraduate, BOU, MEDEL

**Evaluating the Impact of Digital Technologies to Support Open and Distance(ODL)Postgraduate Learners at Botswana Open University (BOU)**

## **1.0 Introduction**

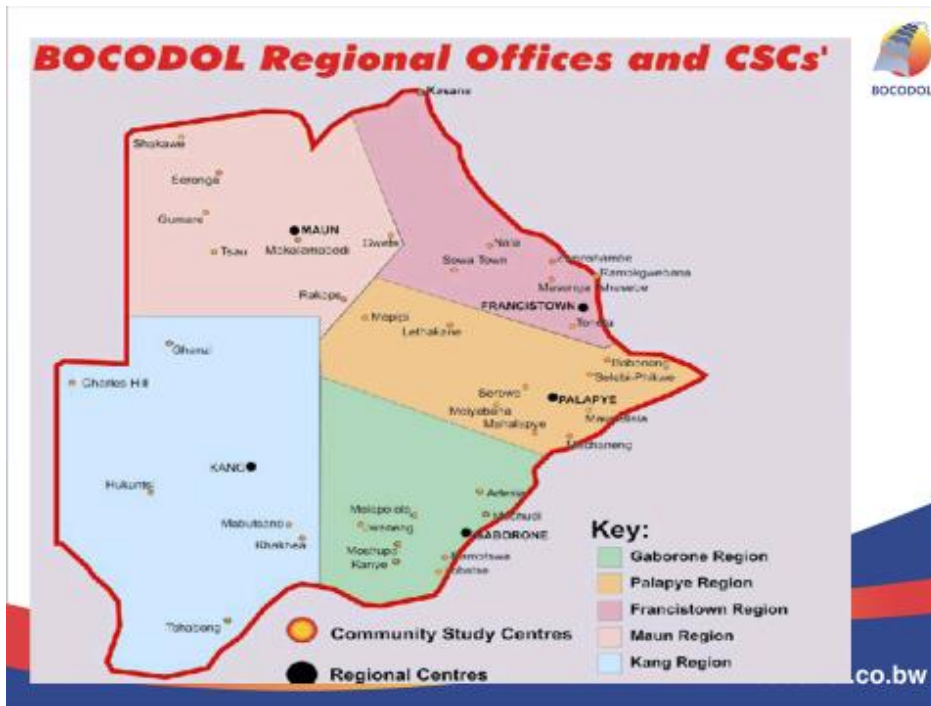
This paper reports the findings from a study on the impact of using digital technologies as part of the support mechanisms for a blended learning methodology mediated programme MEDEL (Master's Degree in Education- Educational Leadership) at BOU. The aim was to evaluate the impact of the digital learner support tools used in the delivery of this programme. Qualitative and quantitative approaches were used to gather data. A Documentary analysis was used to triangulate data. The structure of this paper is outlined thus; a review of the relevant literature to this distance learning programme, methodology section which sets out the investigation process, the findings from the data analysis and recommendation from the study.

## **2.0 Review of the relevant literature on the MEDEL programme**

2.1 The MEDEL programme is delivered to students in five Regional Campuses at the Botswana Open University in Botswana. The Campuses are situated in five regions geographically covering the vast expanse area of the country; Gaborone, Palapye, Francistown, Maun, and Kang. The programme was initially

coordinated from Gaborone Regional Campus before students started registering in other Campuses. The programme is offered through blended learning methodologies.

Figure 1.1 Map showing the five regional campuses



2.2 The MEdEL is a masters’ degree programme in education. This is a post graduate programme targeting post graduate educationists and in-service teachers who are following a management and leadership pathway study. The programme is populated by school administrators, college administrators and university administrators. Schools in the country sponsor their administrators on this programme to sharpen their leadership skills and competencies in educational management. Figure 2 below gives an indication of the spread of the student population doing the MEdEL programme at BOU. Gaborone Campus, as indicated by the huge difference in terms of numbers, is the largest Regional Campus and as such carries the largest capacity of students. This is because, Gaborone, being the capital city of the country, is the most populated. In terms of living amenities, it is the most resourced compared to other cities in the country, hence the large population. In terms of connectivity and access to digital technology, it is well resourced compared to other Regional Centres. This is because resources are easily available in urban cities than in remote areas. It is no surprise then that students’ feedback in Gaborone indicated a high percentage preference for technology mediated support services than students in other centres.

### 2.3 Student Profiling

The students taking the MEdEL programme are mostly working education professionals, hence their preference to study using the ODL mode. For the few students who are not fully employed, these have opted to study through the distance mode as they have other roles they play outside study such as looking after their families, home schooling their children and doing part time self- employed jobs. 95% of the students are adults aged between 22- 52years. In terms of positions held at work, some of these are school principals, senior teachers, heads of department and principal education officers.

Figure 2-student percentage by regional campus

Campus	% Student MEdEL
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Gaborone	60
Palapye	5
Francistown	25
Maun	5
Kang	5
Total	100

2.4 The students in this programme are required to take a minimum of two courses every semester. The Programme is offered over a minimum period of two years and a maximum period of five years to complete the whole programme. The main course content is mediated by technology, through the University Moodle platform. The Moodle platform provides online and downloadable learning materials that are then accessed offline for the MEDEL programme. The programme has incorporated periods of face-to-face block release teaching at the beginning of each Semester by tutors. Assessment for this programme is through written assignments and a final Research paper at the end of the Programme. Assignments are done and uploaded on the Moodle platform while the Dissertation is submitted manually. Tutors and supervisors for this programme are strictly those with doctoral qualifications in their specialisation.

*Figure 3 Overview of course delivery approach*

Digital Mediated strategies	Face to face contact sessions
3 times Discussion interaction per Course on the Moodle platform	1 day Induction of students to Studying through ODL
4 times per Course per semester Chat Forums where students answer question, come up with topics for discussion, respond to and critique authors an theories as guided by lecturer	4 days of face to face teaching Tutorials at a central venue with the rest of the students per Course
Uploading and submission of assignments on the Moodle Platform	Visiting Programme Coordinator for administrative purpose through appointments
Search and research and study materials uploaded on the Platform	Organised meetings with Project supervisors at the Campus or identified Learning Centre

2.5 BOU learner support strategies encompass guidance and counselling whose inclusion is seen as crucial to enhanced retention, participation and progression in the various programmes and courses thereby optimizing success rates.

2.5.1 The strategy responds to the following identified needs:

- regular, responsive and flexible tutor support
- regular contact between learners and tutors and with other learners and or Programme coordinators
- tutor marking system which provides quick and effective feedback within agreed and communicated turn- around time.
- dealing with learner enquiries in a caring, patient, helpful and compassionate manner and environment
- guidance and counselling through all the stages of the learning cycle by trained professionals
- up-to-date learner records and statistics
- suitable arrangements with relevant partner institutions in the delivery of learner support

2.5.2 e-learning and distance learning:

Announcements about registration, fee payment, timetables for both face to face tutorials and assessment submission, project supervision, meeting with supervisors, reference materials, are all done through Bulk messaging(SMS), website platform and Moodle platform.

Assignment support and Dissertation supervision- assistance on these are done at the face to face tutorial sessions and through individual student appointments with their tutors. Students are also allowed to create discussion forums on the Moodle platform for peer group discussions. This seems to be the most popular with students, as high as 95 % of students participate in these.

Face to face support- the programme supervisor visits each Regional Campus and spends a few days meeting with both the students and the project supervisors. The students are given a one on one support through their dissertation by both the programme coordinator and the supervisor. Face to face also takes place during contact sessions which are held either as residential classes over several days at an agreed venue or four different weekends during the running semester. It is at these tutorials that students discuss study progress and any other critical teaching and learning enquiries.

Supporting students leads to experiences such as establishing that communication technologies distribute messages in text, still and moving images and sound media. Generally, messages maybe be communicated to large numbers of learners either synchronously or asynchronously and at Botswana Open University (BOU) these are mediated through Internet, audio, video, smart board, mobile and other social media platforms.

2.6 A combination of Moore's transactional theory (Moore, 1993) and constructivist theory; equivalency theory (Simonson, 1999) were reviewed in conducting this study. These were found to be helpful models to apply to the analysis of learning in digital learning environments particularly in distance education.

Constructivist theory's argument is that knowledge is constructed through dialogue and discussion. Emphasis is on information management and analysis, knowledge construction, problem solving and decision-making. Digital technologies such as Internet are perceived by some scholars as facilitating constructive ways of knowing through chats, e-mail, web discussion forums to name but a few. These are seen to promote collaborative participative learning environment. Constructivist characteristic of technologies are seen as enabling student centred pedagogies. This is a necessary tool in ODL as contributing towards the student centred philosophy where every process or tool is introduced with the hindsight of placing the student at the centre of each activity. Digital Technology promotes collaboration in that since it is an enabler in effective communication, student to student collaboration, students to tutor collaboration, students to coordinator or administrator collaborations are enhanced. The use of digital technologies encourages creation of or constructing of knowledge (Henry Jenkins 2006; Brynjolfsson & McAfee, 2014). This is true in that students are able to surf for information without having to visit a physical Library. Students are able to engage in research more efficiently.

2.7 Social presence as a theoretical theory

The model posits that in a digital environment communication is conducted through interactions occurring in the virtual space. This model is also used by (Stein & Wanstreet, 2003)

Short et al (1976) observed that when social presence is low, group members feel disconnected and group dynamics suffer. Conversely, when social presence is high, members should feel more engaged and involved in-group processes. This was proved true during the Smart-Board interactions where students and tutors were able to interact with one another at a closer range through this technology. Students indicated a high satisfaction especially with regards to reduction of feelings of isolation as ODL learners.

### **3.0 Technology enhanced Learning environments**

3.1 Moodle Platform interactions- In addition to the above, students are accorded the opportunity to interact on the Moodle platform to engage with one another, with their tutors, research supervisors and with Graduate Studies coordinators for academic and other non- academic support issues. What is interesting about this platform is that it is both synchronous and asynchronous. There are chat forums that are timed and students are given prior timetables so as to know when these are coming and what will be discussed and when to go online. They are also asynchronous platforms where students, during discussion forums, are given time per student to make their comments, come up with discussion topics and comment and contribute to these as and when they get an opportunity.

3.2 Smart-Board Technology- These are used during tutorials as well as meetings between Lecturers and students or programme Coordinators and students. This has been found not only to be a good tool for reducing isolation in ODL students but also a tool that brings a sense of commonality of service provision. Students across all the five Campuses receive a tutorial at the same time from the same lecturer. In this way, they are able to understand what their counterpart students at other Campuses are experiencing and to what degree. Students appreciate this tool as it brings them closer together at one point during their study hence leading to reduction of feelings of isolation.

#### 4.0 Quality Assurance in the MEdEL

4.1 Mechanisms have been put in place to monitor and evaluate all the processing of teaching and learning for this programme. The Centre for Interactive Technology is responsible for developing and training staff and students on the different technological mediated platforms that the University is using. The lecturers at the School where the MEdEL programme is housed, supervise and monitor the part time tutors that assist the students through the learning.

4.2 The University has the assessment department as a separate entity from the Academic school, hence they are able to carry out independent audits on how assessment processes are handled. This includes ascertaining if the platforms that the students are using are easily accessible and appropriate and then check and report whether students are adequately trained to use them. In addition, the University has a Centre for Teaching and Learning and Quality Assurance that checks on implementation processes and procedures compliance. They conduct audit surveys during and at the end of each cohort to check students' satisfaction on the teaching and learning support.

4.3 The University has a mechanism for Learner Profiling at the beginning of each Academic Year Cohort. As they register, students complete an instrument that captures their biodata as well as other learning needs. These are then shared with the Student Affairs and Welfare department for profiling and sharing with relevant stakeholders so that appropriate resources are sourced for the cohort according to their needs. Where there is no internet connectivity for example, other means are sought to interact with such students with minimal disruptions during their study.

#### 5.0 Research methodology

A survey was administered to one cohort of 10 students over a semester to gauge access to technology, satisfaction, speed of information, adequacy of training, preference and others. More than 80% of students responded to the tools administered and the pattern of response was as follows: Figure 4.

Type of Technology and media tool used to interact with MEdEL	Most Preferred	Highly accessible	Should this media be continued on this programme( Yes/No)
SMS-mobile	80%	100%	Yes
Email	95%	95%	Yes
Website	95%	80%	Yes
Moodle Platform	85%	80%	Yes
Smartboard	88%	80%	Yes
Facebook	90%	90%	Yes
Whatsup	98%	100%	Yes
Post	30%	30%	By request
Face to face meetings	50%	50%	For Inductions only

The survey was administered in the form of a questionnaire and this was distributed to the MEdEL students where respondents were given two weeks within which they should have returned the questionnaire.

Face to face meetings were used as another tool to collect informational data from students. Students were asked questions at the Induction meetings that are held at the beginning of each Semester. It was explained during this face to face question and answer that their responses will be used to analyse the preferred mode of interaction with them in the programme and other cohorts to come in the future. The responses were then collated and analysed.

A monkey survey was also administered to programme administrators and a sample of tutors to determine accessibility and preference of the methodologies used.

#### 6.0 Research Findings

The study revealed that support systems such as the applications and registration systems are enhanced by digital technologies. For BOU for example, before introducing the Learner Management System that is currently in place, records were kept manually and this posed several challenges with management. Records could easily be lost, mixed up and there was no adequate space to keep manual records as the University was growing. The coming in of the integrated Technology system improved records at several sections of the University including registration data, fees management, assessment management, including tutor management. This improvement in Digital student support enhanced proficiency in processes hence students' satisfaction as indicated in the survey results in figure 4. Students responses indicate that they prefer digital supported strategies. Their satisfaction with the use of the smartboard, and the feedback that this method reduces feelings of isolation, is clear indication that the University needs to increase and roll out the use of Digital technologies to other programmes of study in its pursuit to use blended teaching and learning support methodologies.

## **7.0 Conclusion**

Distance learning support systems should always be designed to reduce the learning isolation characteristic of distance learning modes. This would in fact help reduce the risk of students becoming demotivated and therefore, more likely to drop from the programme. The focus should be on how the students could experience co-operative learning without the standard face –to- face interactive processes taking place in the classrooms or tutorials.

The students' response to the survey indicated a high level of satisfaction with the Digital media platforms that the MEdEL programme is using. Over 90% of respondents want the University to continue using digital platforms for teaching, learning and support. Whatsup was the most preferred by most students. This can be attributed to the fact that Mobile usage is high at this level and we were able to establish that most of the students at Masters level use Smart phones.

The study concludes that digital technologies used at BOU enhanced learner satisfaction and impacted students positively. Students not only scored these platforms or tools high in positive motivation surveys but also indicated a willingness to continue with their studies using these.

**Recommendation:** BOU to consider increasing and rolling out the use of digital technologies to all programmes thus aligning delivery to its strategic goal; “a technology enhanced open University” page 20.

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