BUILDING ACADEMIC STAFF CAPACITY TO SUPPORT ONLINE LEARNING IN DEVELOPING COUNTRIES

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ABSTRACT

Higher education institutions (HEIs) in Africa face the challenge of responding to the expanding demand for tertiary education while maintaining or enhancing the quality of their course offerings. This demand has led to some HEIs introducing the use of interactive web technologies to support their distance teaching and learning practices. However, academic staff at these institutions may struggle to provide sufficient support to online learners in part due to inadequate staff capacity in terms of familiarity with and use of online communication tools and virtual learning environments. This paper reports the design and development of an openly licensed capacity-building intervention and the piloting thereof with academic staff at three southern Africa educational institutions. The aim of the capacity-building intervention is to initiate skill development and introduce foundational concepts in support of engaging online learners. The design and development of the course material is discussed, and the experiences of the pilot delivery are examined.

KEYWORDS

Online Learners, Learner Support, Capacity-building, African Higher Education, Open Course

I. INTRODUCTION

The potential of using information and communication technologies (ICT) to increase access to higher education is evidenced by the way it has grown and expanded over the past few years [1]. The eLearning Africa 2012 Report [2] notes that in a survey of 447 respondents, a large majority of people (74%) make use of ICT to aid teaching and learning. The report also notes that the "landscape has changed substantially over the last five years" and identifies increased access to the Internet at increased speeds and reduced costs as a major contributor to this change.

Many higher education institutions (HEIs) aim to integrate educational ICTs in support of their teaching and learning in order to enhance the quality of the education provided. One of the benefits of introducing online teaching and learning is that it may help to expand curricula offerings more cost effectively and may help students gain important technological skills [3]. In deploying virtual learning environments (VLEs) to support the teaching and learning process by housing online courses, HEIs endeavor to make courses more student centered, and they enhance communication among students as well as between students and lecturers [4, 5].

HEIs need to consider the availability of administrative and ICT support, the choice of instructional methods, the assessment strategy, and maintenance of online resources [3]. Thoughtful planning and significant financial commitment are often required to ensure high-quality learning support [1]. However, lecturers may be unprepared to implement technologically

supported learning activities due to a lack of ICT skills [6] and an insufficient understanding of the purposes and functionality of particular components available both within and outside VLEs.

This paper discusses the support that online learners require in order to engage successfully with their studies. It then focuses on the knowledge and skills lecturers need to be able to effectively support online learning. Various approaches to developing capacity for lecturers are examined. The experiences of designing and developing a set of course materials to build this capacity are described. The paper then reports the experiences of piloting this capacity-building intervention at three southern African HEIs.

II. LEARNER SUPPORT

Learner support is essential for successful online learning in that it assists in promoting persistence and engagement and in avoiding dropout [1]. The support that online learners require goes beyond academic support and includes administrative support as well as technological support. This support should be flexible, continuously available, easily accessible, and genuinely useful for students [1]. It is important to understand the needs of the prospective learner groups so that institutions are able to determine the nature of support needed. Therefore, in addition to an awareness of associated costs for students, institutions should determine prospective learners' educational goals, readiness for online learning, and access to and familiarity with the technology required [1]. To be successful, online learners require orientation to a variety of common end-user software, the course (virtual) environment, basic use of the Internet, and how and where to get support and information on technological requirements [3].

Supporting online learners requires lecturers to maximise the affordances of a VLE by designing and implementing highly engaging, interactive, collaborative, and multidimensional [3] courses. Ongoing learner interaction can be achieved using communication tools such as e-mail, structured discussion forums, and chat rooms. The lecturers should aim to develop an online teaching-learning community that will provide a safe learning environment for the group of learners. The introduction and deployment of VLEs or learning management systems has grown rapidly in higher education institutions worldwide [4]. The aim of a VLE is to create a learning environment in which all aspects of teaching and learning are handled in a reliable and standard user interface throughout the institution [6] on a course-by-course basis while preserving the integrity of the course environment.

III. STAFF CHALLENGES TO SUPPORTING ONLINE LEARNING

Once it has been established what types of support online learners need, HEIs need to be able to offer it to students. A common challenge that institutions face is how to build the staff capacity to integrate technology and to manage and facilitate their online offerings [5]. Most lecturers do not comfortably engage with educational technology when exposed to it for the first time [7] due to various environmental and culture differences between the online and traditional classroom. Some of these characteristics of online learning are contrasted with traditional classrooms in table 1 [adapted from 8 and 9].

Characteristics	Online Learning	Traditional Classroom
Collaboration	• Teamwork and networking are valued, promoted by easy online interaction • Virtual communities	• Classroom is a self-contained unit, basis of individualism and competition • Physical communities
Connectivity and access	• Interaction with peers and experts • Fast and unobtrusive contact through e-mail and conferencing • Not place and time dependent	• Explicit and implicit barriers between peers and experts • Bounded geographically into one-size-fits-all program
Student-centeredness	• Instructors define goals, then largely facilitate or manage • Students largely determine direction through participation	• More structure provided by instructor • Less responsibility for learners
Resources	• Via the web—huge resource • Interactive media-rich offerings	• Via books, journals—limited by what is at hand locally • Mostly static media available

Table 1. Some contrasting characteristics exist between online and traditional classrooms.

The changes needed to convert from a traditional classroom learning to an online learning environment as indicated in Table 1 lead to several challenges that may inhibit staff from engaging in online instruction. The challenges identified in Yang and Cornelius' study on online education [3] are as follows:

- Changing the role of the lecturer: online education is seen as student-centered education, while traditional education is regarded as tending towards instructor-centered, the former requiring the instructor to become more of a facilitator than lecturer.
- Changing the role of the learners: they transition from traditional, passive classroom learners into more active, online inquirers.
- Integrating new technologies: staff need to learn how to make the most appropriate use of technologies for teaching and learning purposes.
- Improving interaction and communication: staff need to address the challenges of not having traditional, face-to-face contact as well as how to build interpersonal relations with learners.

At a very early stage in the development of ICTs to support teaching and learning in higher education institutions, Plomp recognized and identified the multiple roles that lecturers are now required to perform in the HEI sector:

Lecturers will become facilitators and designers of students' learning environments, and they may take on a variety of roles such as resource person, coordinator, and often co-learner and co-problem solver. This demands a special approach to staff development, which goes beyond the training of basic ICT skills [10].

In order to address the challenges identified above, lecturers need to be aware of what competencies are required to facilitate online learning. These competencies include being a content facilitator, competent ICT user, and learning designer amongst others [5]. Anderson [11] asserts that an excellent online teacher is primarily an excellent teacher. But beyond good teaching skills, facilitators require sufficient ICT skills to be able to address technical challenges that may arise. Online facilitators need to understand their roles and responsibilities and be fully

prepared in order to teach online courses. In some instances, they also need to design and deliver strategies, techniques, and methods for teaching online courses. The online facilitator needs to understand not only the ICT platform used to support online teaching, but also the design skills necessary to avoid "dumping" content into the online environment [5]. In order to foster co-operation, staff need to promote learner-to-learner interaction, engage learners in regular activities, and cultivate a sense of self-directedness in students [3].

IV. BUILDING STAFF CAPACITY

Once the required competencies have been established, the institution needs to determine an approach to administer professional development to academic staff in order to cultivate or enhance these competencies. Lecturers need to become familiar with the online learning environment, receive training on how to use the required technology, and be able to get support from experienced instructors when needed [3]. Some institutional approaches to the development of staff are categorized as follows [5]:

- Innovation: adopt an emphasis on innovation, rather than the technology, which supports opportunities for staff to attempt new teaching and learning methods that encourage staff to support each other and share knowledge and skills.
- Online facilitation of competencies: the competencies required for online facilitation are used to design the basis for a course about online teaching and learning. These competency areas include administration, facilitation, technical, and evaluation skills.
- Accredited courses: formal, accredited courses used by academic staff to obtain certificates or degrees in online teaching.
- Professional staff development: professional development opportunities delivered via online methods.
- Localized peer support: staff provide peer support to others engaged in adopting new technologies in teaching and learning; for example, through a mentoring program.

In order to integrate learning technologies across the institution successfully, staff development strategies need to focus on achieving a critical mass of staff who are competent online course designers, developers, and facilitators. Thus institutions may use a combination of approaches listed above to build staff capacity.

It is important to design a capacity-building program that is aligned to the needs and/or readiness of academic staff. A staged approach can be used to design a staff development program that uses incremental steps to match readiness levels of the mainstream staff and expose them to a less risky journey to moving online. This approach aligns to the view that staff development needs to be delivered "just in time" and grounded in specific, localized contexts [5]. The provision of clear definitions of the entry-level technical and pedagogical skills and the content appropriate for each step towards competency should be determined.

Another relevant approach focuses on peer support and mentoring. As staff practice the newly learned skills, they may seek expert or experienced technical and/or pedagogical advice. The establishment of a community focused around educational technology provides opportunities for staff to share experiences, ideas, and reflections [3, 7]. This community could be informal and made up of purely academic staff, or the institution could establish a centralized unit to provide technical and pedagogical support [12]. Authentic contexts to situate learning activities for academic staff should be exploited. If projects and project teams within schools or departments are the context for staff development, they provide authentic purpose for more effective results [5]. It is recommended that staff development activities combine online and face-to-face learning opportunities so that staff experience learning online from the learner's perspective [3, 5].

V. THE COURSE DESIGN

As an educational non-governmental organization with a focus on supporting all elements of distance education and working in southern Africa for over 20 years, the South African Institute for Distance Education (Saide) has considerable experience in distance education course design and learner support. In 1998, Saide published a guide for distance education tutors, called "Supporting Distance Learners," that focused on a traditional primarily paper-based distance education context [13]. Over the years, the emerging use of educational technologies in distance education and the resulting pedagogical innovation has progressively made it possible to shift from paper-based distance education towards online distance education [14]. An idea was raised to update "Supporting Distance Learners" as an online course to take into account learning theories and digital tools in an online environment. This update is reflected in changing the guide's name to "Supporting Online Learners" (SOL).

The resource was redesigned with the principles of open learning in mind, where the goal is to remove the barriers to learning while being scalable and flexible so that no one is denied access [15]. Open learning promotes lifelong learning opportunities and learner-centered learning processes. As part of the open movement, open educational resources (OER) provide a way to share and use educational resources without the need to pay royalties or license fees [14]. From the outset, it was decided to make this resource available as an OER for other educators to access, share, and adapt.

With the help of an external consultant from Beyond Distance Research Alliance (BDRA) at the University of Leicester, the design team set about updating the content and form of the guide into an online course with materials initially available as web pages on Saide's OER Africa website [13]. It was recognized that the online resources also needed to be situated within some kind of virtual environment in order to provide a stable environment for the educators to practice using some of the digital tools in the same virtual space as the learning content. During the development of the course materials, this environment was first developed in the Ning social networking application [13] and then later in the Moodle VLE. This VLE deployment aligns with the principle of sharing OERs by providing access to resources in a variety of formats.

The resource is available as set of web pages with an OER licensed under a Creative Commons Attribution 3.0 Unported License (which means that it can be used and adapted as long as it is attributed) [16]. Additionally, the resource is also available as an unmediated set of online course materials or as a mediated course, both of which could be delivered within a VLE.

The learning design of the course aimed to integrate relevant theory and the careful design of learning materials and learner activities, building an appropriate learning pathway that takes learners through the desired experiences. The course aims to achieve the following learning outcomes for educators:

- Prepare lecturers for teaching and learning with technology
- Understand the role of a facilitator in supporting learners involved in open learning, distance education, or online learning
- Support learners in the individual and collaborative construction of knowledge
- Support learners in moving successfully through the five stages [17] that online learners typically go through
- Support learners effectively through the use of asynchronous and synchronous communication tools
- Use assessments and assignments effectively as learning tools

During the design of the course, the opportunity was recognized for the Saide design team not

only to engage with and review the materials independently, but also to seize the opportunity to facilitate a staff professional development exercise based on SOL. Staff completed a workshop session on the key learning tasks or activities by working through the course within a two-week period. The facilitator was remotely located in the UK, which provided a partially authentic distributed environment even though all of the participants were co-located. This activity provided what may be viewed as a pre-pilot exercise in order to complete the course development within an authentic environment, where the designers of the activities were themselves developing new skills with respect to the following [13]:

- Navigating the online learning environment
- Understanding and managing the learning process in an online environment

The key elements learned from this endeavor [13] were expressed as the following:

- Significant insight was gained in terms of understanding the challenges with regard to online facilitation/tutoring, particularly in a developing country context.
- The time and effort needed to familiarize learners and tutors with the tools and processes in online learning should not be underestimated.
- The intensity of engagement required in an online course is time-consuming, and this must be taken into account when planning an online course implementation.
- The participant group size needs to be taken into account in terms of effectively managing online interactions.
- Intensive capacity development is required for tutors or facilitators in order to undertake their assigned tasks well.

These elements were then incorporated into the revised course design. The SOL course is divided into six units. Table 2 lists the six units, provides a brief description and purpose for the unit, and lists the primary learning activities that take place within each unit.

Unit	**Description and Purpose**	**Learning Activities**
Unit 1: The Lifelong Learner	The aim is to familiarize participants with the concept of e-learning readiness and some of the challenges online learners face when they learn at a distance and use technologies that may be new to them. This unit also explores the changed roles of lecturers, learners, and facilitators that support online learners.	• Explore the concept of online learning readiness. • Review the changing roles of lecturers and students. • Complete a survey on online learning readiness needs for lecturers. • Recognise the e-readiness needs of learners. Review the competencies required for online facilitators.
Unit 2: Open and Online Learning	Participants are exposed to concepts commonly associated with online learning: namely, the relationship between open learning, distance learning, and e-learning; various modes of e-learning programme delivery; and the pervasiveness of Web 2.0 technologies [18] that allow online users to interact and collaborate with each other as content creators.	• Review the principles of open learning. • Explore different types of learning programs: web supplemented, web dependent, and fully online • Explore the use of Web 2.0 technologies for learning.

Unit	Description and Purpose	Learning Activities
Unit 3: Support for Online Learners	Participants are familiarized with pedagogical theories underpinning online learning. The Wisdom Community (WisCom) learning design model [19] informs the design of each of the learning activities, so that participants are exposed to application of the model throughout the course and they themselves progress through this five-stage learning pathway. The course also incorporates elements of Salmon's five stages of online learning [17].	• Reflect on the different approaches to learning online. • Create online learning activities using the Wiscom model. • Explore how to support learners to move through the five stages of the Salmon model.
Unit 4: Asynchronous Communication	Available tools for asynchronous communication are explored, such as e-mail, discussion forums, blogs, wikis, and mobile phone text messages. Educators are encouraged to consider the implications of using these tools in their teaching and learning and have opportunities throughout the course to implement them in activities.	• Explore the use of asynchronous tools such as discussion forums, blogs, and wikis. • Create guidelines for encouraging participation and depth in asynchronous communication.
Unit 5: Synchronous Communication	Participants explore the ways in which synchronous online communication can be managed to provide maximum support for learners. An opportunity is provided for live virtual classroom web conferencing through tools such as Blackboard Collaborate.	• Explore the use of synchronous tools such as instant messaging, online tutorials, and virtual worlds. • Experience the use of web conferencing. • Create guidelines for synchronous facilitation.
Unit 6: Assessments and Assignments	This unit examines the importance of assessment in fostering learning. The unit addresses the kind of assessments that challenge learners to go beyond mere regurgitation of facts and examines ways of constructing assignments as course scaffolding.	• Recognise the role of assignments in supporting learning; build collaboration into assignments. • Create guidelines for providing constructive feedback. • Discover the use of e-portfolios. • Explore the use of plagiarism tools.

Table 2. The SOL course units and associated learning activities summarized.

VI. THE PILOT COURSE DELIVERY

In the experiences of piloting the Supporting Online Learners Course, the authors were approached by the Southern African Development Community's Centre for Distance Education to provide professional development workshops for early adopters of online learning at several of their HEIs already involved in traditional distance education, namely: the Namibian College of Open Learning, the Botswana College of Distance and Open Learning, and the University of Swaziland.

These professional development exercises formed an opportunity to test and refine the SOL course. The aim of the workshops was to familiarize academics with some of the theory and practice of online learning and enable them to decide on their next online learning implementation steps, both personally and institutionally. Both pilot workshops were delivered via the Moodle VLE, which is customizable and free open source software (under the GNU Public License) [6]. Live meetings were facilitated via the use of the Blackboard Collaborate.

The first SOL capacity-building pilot was run in November 2010 for 10 participants using three face-to-face facilitators. The web-conferencing activity was undertaken by dividing the participants into three groups situated in different rooms to simulate distributed locations. No further online facilitation was provided, although the participants had continued online access to the course environment. A review of the course was undertaken by the authors who then refined the course based on experiences in the pilot.

The SOL course was run again in November 2011 for 27 different participants. In order to deploy the practice of "the medium is the message," this workshop was presented using a blended approach. The first two days of the workshop offered the initial confidence-building face-to-face support for participants, while the following three days were offered online, emphasizing and embedding the skills required for online teaching and learning. During the first online day, the main facilitator was at a remote location, but the participants were still together in a local computer laboratory supported by a local facilitator. The subsequent remaining two online days were conceptual, in that the participants were encouraged to engage with the course from distributed locations over a period of time longer than the two days. This change was to provide some experience of the "anytime, anywhere" aspect afforded when learning online.

Prior to the start of each course, participants completed an online learning readiness survey. Once the courses were complete, both facilitators and participants provided anonymous course feedback via an online evaluation. The following sections highlight the experiences of the pilots.

A. Aspects that Went Well

Data from the online evaluation indicated that participants found the workshops to be extremely valuable, equipping individuals with the basics of how to engage both with online learning themselves and with other online learners. The course also illustrated to participants how they can help their students to own their knowledge generation. The highly interactive nature of the workshops enabled sharing of ideas among participants, leading to new collaborations within the institutions. The workshop course enabled participants to think about the steps needed to begin online facilitation, both personally and institutionally. Participants enjoyed the practical application activities and engaging with each other and the facilitators through discussion forums, chats, and reflective blogs. The blended approach in the second workshop allowed participants to experience online learning from a student perspective as well as learn about web conferencing from a genuinely remote location.

B. Aspects that Required Improvement

Both facilitators and students suggested a few aspects for improvement. Participants felt they needed more time to engage fully with all aspects of this course and suggested an extension to the online-facilitated portion of the blended workshop. Connection and audio setup issues led to some frustration experienced by participants during the live web conferencing sessions. In order to address these concerns in future workshops, a mandatory "drop-in session" will be incorporated one day before the workshop to familiarize the participants with the technology. Additional technical support for using this tool needs to be considered in future workshops. The facilitators suggested that, during future workshops, time could be allocated to identify participants as future workshop facilitators, as well as those who could provide mentoring support to their colleagues.

C. Institutional Impact

During the final session of each workshop, participants determined a set of recommendations for each institution. In summary, the main recommendation for each institution was to create an online teaching and learning road map, such as that developed by the National Centre for Technology in Education [20]. In order to develop the road map, the institution would need to assess e-readiness for staff as well as learners. Further recommendations included establishing affected stakeholder commitment to the road map and starting with pilot implementations before full rollout. Institutions also planned to seek support, where needed, from the other South African Development Community institutions involved in similar initiatives and to engage in benchmarking of online learning practices with other HEIs in the region.

VII. CONCLUSION AND FUTURE WORK

This paper reported the experiences of designing a capacity-building intervention to enable academic staff to successfully support online learning. It also reported on the successful piloting of the capacity-building course at three southern African HEIs. The course is now available as an OER in three formats for others to use and adapt. The authors will continue to revise and update the "Supporting Online Learners" OER as per the findings of the workshops as well as continue to facilitate this course for other HEIs in southern Africa. Any feedback from anyone using, adapting, or reviewing the OER would be welcomed by the authors. The aim of future research is to use professional development to build capacity in online course design and online facilitation, creating a suite of OERs. This development could consist of a series of interventions structured around course and materials design principles; online course design using Moodle; design and development of digital objects/multimedia; the use, adaptation, and development of OERs; online assessment and evaluation; supporting online learning; quality assurance for online courses; and policy development for online learning.

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IX. ABOUT THE AUTHORS

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