Capacity building of academic staff in the integration of ICT and OER in teacher education programs at the Open University of Sri Lanka

Shironica Karunanayaka, The Open University of Sri Lanka
<spkar@ou.ac.lk>,
and
Som Naidu, Swinburne University of Technology, Australia
<snaidu@swin.edu.au>

ABSTRACT

Growing interest in promoting Education for All (Dakar, 2000), open access to educational resources, and the economic imperatives for adopting greater use of open educational resources (OER) (UNESCO 2012 declaration) is necessitating the need for educators to refocus their attention on the integration of OER and ICTs in learning and teaching. ICTs enable educators gain access to a wide variety of teaching-learning materials available as OER that can be freely accessed, reused, revised, re-mixed and re-distributed (UNESCO, 2012). While ICT can be used to harness the benefits of OER more efficiently, effective use of OER can be best realized through systematic course design and integrating appropriate OER in the learning and teaching transactions.

A comprehensive program of work is being undertaken in the Faculty of Education at the Open University of Sri Lanka, in partnership with the Commonwealth of Learning to build the capacity of its teaching staff. During a period of six months in 2013, thirty teacher educators have been engaged in designing five teacher education courses, with ICT and OER integration. This paper describes this work including reporting on what kind of capacity has been built in individuals and to what extent; what factors facilitated this kind and level of capacity building; what challenges were faced and how these can be addressed; and what are the impacts of this capacity building on their professional development.

Interpretative Phenomenological Analysis (IPA) is used as the methodology for examining participants' 'lived experiences' during this process. This method explores in great detail how participants are making sense of their personal and social world (Smith & Osborne, 2007). Qualitative data is gathered through a series of concept mapping exercises and studying the changes over time, combined with individual narratives and focus group interviews.

Preliminary analysis of data revealed significant changes in participants' development of understanding around key concepts on OER and their relationships, remarkable capacity building in 'learning-centered' course design, identifying and integrating OER, and confidence in applying their new knowledge and skills. The 'compulsion' induced by the project activities with targets, continuous facilitation, team work, motivation and satisfaction were clearly the facilitating factors. Even though challenges such as selecting relevant and quality OER and effective integration, technical skill limitations and time constraints were present, the participants' motivation in finding solutions to overcome these were prominent. This capacity building experience has visibly impacted on participants' professional development as teacher educators and their ability and confidence in the effective integration of ICT and OER in future course design activities, in a 'learning-centered' manner.

INTRODUCTION

During the first six months in 2013, The Open University of Sri Lanka, in partnership with the Commonwealth of Learning embarked on a comprehensive program of work to build the capacity of its teaching staff in the Faculty of Education in the integration of OER and ICT in their teaching. Thirty teacher educators have been engaged as part of this work in redesigning and integrating OER and ICT in five teacher education courses. This paper describes that work including reporting on what kind of capacity has been built in individuals and to what extent, and what are the impacts of this capacity building on their professional development. Interpretative Phenomenological Analysis (IPA) is used as the methodology for examining participants' 'lived experiences' (Reid, Flowers & Larkin, 2005) during this

process. This method of research explores in great detail how participants are making sense of their personal and social world (Smith & Osborne, 2007). Qualitative data is gathered through a series of concept mapping exercises, combined with individual narratives and focus group interviews enabling the study of changes of perceptions, perspectives and understandings of participants over time.

REVIEW OF LITERATURE

Integrating OER and ICT in a Learning-Centred Course Design

OER can be viewed as educational materials that are licensed in a manner that will provide users with rights to use them in different ways at no cost. Open licensing permits users to re-use, combine and modify any original work, while allowing authors to have their work acknowledged (Fitzgerald, 2007). The licenses can vary from the least restricted 'Attribution' (CC BY), to the most restricted 'Attribution-NonCommercial-NoDerivs' (CC BY-NC-ND), which only allows others to download work and share with others as long as they give credit (Creative Commons, 2010).

While the pedagogical potential of OER is closely linked with the concepts of resource-based learning and distance education, its benefits can be harnessed more efficiently through the digital potential of OER (COL, 2011). Through technology, OER facilitate a collaborative approach to generation of knowledge by allowing free and open sharing of resources and teaching practices that would enable educators to move towards an 'open pedagogy' (Hodgkinson-Williams, 2010). Open education is not limited to OER, as it draws upon open technologies that facilitate collaborative, flexible learning and the open sharing of teaching practices that empower educators (Geser, 2007).

The focus of attention on open education extends beyond access to innovative open educational practices (OEP), which are 'practices which support the (re)use and production of OER through institutional policies, promote innovative pedagogical models and respect and empower learners as co-producers on their lifelong learning path' (see Ehlers, 2011). Integrating OER into teaching and learning necessitates the adoption of more "learning-centered" pedagogical designs. Scenario-based Learning (SBL) is such a model based on the principles of situated learning, and which promotes the role of teacher as a 'choreographer' of the learning experiences for their students (Naidu, 2010a). The possibilities and opportunities offered by ICTs and OER help to optimize the design of an effective, efficient and engaging learning experience (Naidu, 2010b).

Capacity Building of educators in ICT and OER integration

While 'capacity development' is seen as an internal process, 'capacity building' is more often understood as a purposeful, external intervention to strengthen capacity over time (Simister & Smith, 2010). OER has the potential to build capacity by 'providing institutions and educators access at low or no cost to the means of production to develop their competence…' (COL, 2011, p.13). When integrating OER in teaching and learning, the primary responsibility for finding the right materials to use, and for using them to support effective education resides with the institutions as well as the educators responsible for delivery of education (COL, 2011). Educators are expected to be 'change agents' and for building greater change capacity of educators, four core capacities have been identified - personal vision-building, inquiry, mastery, and collaboration (Fullan, 1993).

Any educational innovation requires not only a change of resources, but also of using new teaching strategies and alteration of beliefs (Fullan, 1993). Experience, reflection, and support are key common components of the process. Furthermore, various support mechanisms with information and materials are needed to facilitate reflection and belief change (Ertmer & Ottenbreit-Leftwich, 2009). Educators need help with this process.

METHODOLOGY

The participants in this study are 30 academic staff members of the Faculty of Education at OUSL. They are a diverse group including professors, senior lecturers and junior lecturers, within a wide age range of

30-60 years, and with work experience at OUSL from one to thirty years. All are qualified teacher educators, with professional qualifications in education and actively involved in curriculum development, teaching and assessment in the teacher education programs of the Faculty. They are a homogeneous group within the same context, involved in the common pursuit of designing teacher education courses with ICT and OER integration.

The study explored the following research questions:
- What kind of capacity has been built in individuals?
- To what extent has capacity building occurred in individuals?
- What factors facilitated this kind and level of capacity building?
- What were the challenges faced how can these be addressed?
- What are the impacts of this capacity building on their professional development?

Interpretative Phenomenological Analysis (IPA) is used as the methodology for examining participants' 'lived experiences' (Reid, Flowers & Larkin, 2005) during this process. This method explores in great detail how individuals are perceiving the particular situations they are facing and making sense of their personal and social world. The focus is to discover the meaning of the experience of each individual through the participants' and researchers' interpretations (Smith & Osborne, 2007). Accordingly, qualitative data was gathered with a three-pronged strategy which included concept mapping, combined with individual narratives and, reflections, and focus group interviews.

Participants were asked to develop a series of concept maps about their perceptions and perspectives on OER and related concepts at different stages of the process – initial stage, mid-way and at the end. The concept maps were to be accompanied by a narrative on how their understandings have changed over time. As a final step in the data gathering process, semi-structured focus group interviews were held with each course team, to gather group insights on their capacity building.

The contents of narratives, reflections and interview transcripts of selected participants representing each team were examined in detail to explore individual perceptions on their experiences and to capture the meanings by close engagement with the text through a process of coding and interpretation. Emergent themes were identified and similar themes were clustered together, revealing patterns of meanings. This allowed making sense of ideas, thoughts and feelings of the participants, reflecting on their capacity building experience.

RESULTS & DISCUSSION

What kind of capacity has been built in individuals and to what extent?

Analyzing participants' narratives comparing different versions of the concept maps created by them revealed the changes in the development of their understanding around key concepts on OER and their relationships. The following quotes from a selection of their narratives reflect the kind of changes that had occurred.

> "…Initially the OER concept was strange to me. But engaging in the activities/workshop sessions provided more knowledge and how to integrate OER…The key concept is the same in all three versions of my concept maps-OER…Gradually when I gained more knowledge I identified related concepts…relationships and links…could provide examples…identified key features of each concept…Later I could cluster related concepts. Gradually my concept maps became more complex…"

> "…I can confidently say that my views about the concepts related to open learning, open scholarship and OER changed during the period of last six months. The value of open scholarship is that it enables more opportunities of learning…it would support open learning…OER become very important in the open learning context. Therefore, open learning which is supported by e-learning requires course design based on OERs. Then OER-based e-learning and teaching becomes a reality…"

"…The concept of OER was new to me…Previously I had no clear idea but I guessed it was something linked with online learning or which could facilitate learning…But after attending the workshop sessions I heard many new concepts…I feel I will be familiarized with the concepts and words while working in the future…."

"…I thought OER are digitized educational resources that are available in the public domain…But now my perspectives about OER are expanded…We should use them in our curriculum designing and teaching/learning. Only, we should know how to adapt/adopt to suit our needs within our cultural context…"

These quotations which comprise a small sample, indicate evidence of changes that include development of new knowledge, new thinking, perceptions, attitudes and also new skills. For instance, initially their perceptions on OER were at a very basic level, thinking mainly about them as freely available resources from the internet. However, over time, their views have significantly expanded to include related concepts around OER such as open learning, open licensing, open scholarship, open badges, OER-based learning, and OER-based course design, inter-relationships among different concepts and their implications for teaching and learning.

The focus group interviews and individual reflections revealed significant capacity building among individuals in OER-based course design, using SBL approach.

"…Scenario-based learning is very new to me…I learnt how to write scenarios, how to develop activities and assessment tasks and how to integrate OER…Using OER in the course design, we can make our students self-regulated learners…"

"…When we design our courses, OER should be effectively used to facilitate and enrich learning activities…OER should not be used only as an external resource/reading material, but need to be built-in within the design…Scenario-based learning is helping us to decide what to integrate and how to integrate OER…"

The importance of having a "learning-centred" approach to course design such as SBL to make decisions about the effective integration of OER has been realized by the participants, through the hands-on experiences. Furthermore, their skills to identify, evaluate, develop, adapt and integrate OERs into teacher education courses have been developed, as well as their confidence in applying their new knowledge and skills.

What factors facilitated this kind and level of capacity building?

The themes emerged during analysis revealed various factors that facilitated capacity building of participants, which could be categorized as Institution-related, Project-related, Peer-related and Personal. The relevance of OER-based learning for the ODL mode at OUSL, the organization of project activities with targets, guidance and facilitation of resource persons, team work, self-motivation and self-satisfaction comprised as significant facilitating factors.

Table 1 provides a summary of facilitative factors identified, supported with quotes.

Table 1 – Summary of facilitative factors

Category	Facilitative factors/Themes	Supportive quotes
Institution-related	Relevance of the experience	"…As an Open University academic, open learning and its conceptual base is relevant to me…" "…Our students are distance learners.. I think the best way is to provide relevant OERs…"
Project-related	- Hands on experiences - The project activities with targets	"…By actively participating in this workshop we learnt how to integrate OER in different ways – through learning-by-doing…"

	- Facilitation and guidance	"…We were forced to do the work because of the Workshop targets and objectives…" "…Constructive feedback from the resource persons and Senior academics was very important…"
Peer-related	Team work	"…The main thing is we are working as a team…" "…I think the success is not only because of our commitment but also contributions of all…that helped us to reach our objectives…"
Personal	- Self-Motivation - Satisfaction gained	"…I really enjoyed the workshops…I was always motivated…" "…I feel the satisfaction of our success…"

What were the challenges faced how can these be addressed?

During the course design process, the teams were engaged in reviewing and revising the learning outcomes, developing the learning experiences and assessment activities, and integrating ICT and OER in their designs. The key focus here was not only on identifying, selecting and adopting relevant OER, but heavily on designing the learning experiences in order to effectively integrate OER to support learning and teaching.

Since the concept of OER was totally new to the majority of participants, identifying and finding relevant and appropriate OER to be integrated in the course as well as deciding on how to integrate them and to what extent, were challenging tasks for them. "Unawareness", "time constraints", "heavy workload", "lack of prior experience", "need for more practice", "technical skill limitations", "medium (English)", "access problems" and "finding appropriate OER" were the key challenges identified.

The designing and developing of the courses with ICT and OER integration was found to be very demanding for course teams, as reflected in the following:

"…At the beginning it was a very complex situation…"

"…Finding appropriate OER to suit our cultural context is difficult…How relevant are they?..."

"…When trying to integrate OER into courses, you have to select and evaluate them, decide how to integrate and to what extent…The challenge is to make sure to use OER appropriately…"

However, despite the challenges, the participants' motivation in finding solutions to overcome these challenges, and commitment towards completing the tasks through collaborative efforts were abundantly evident.

"…I feel the challenges and limitations are also opportunities…"

"…Always we could manage all issues, working as a group…"

"…Even with whatever constraints, we have to move forward…'

What are the impacts of this capacity building on their professional development?

This capacity building experience has visibly impacted participants' professional development as teacher educators and their ability and confidence in the effective integration of ICT and OER in future course design activities in a 'learning-centered' manner. This impact is captured in Table 2.

Table 2 – Summary of impacts

Impacts	Quotes to support
Knowledge	"…Now I know what resources are available, what types to use and how to integrate…I can go beyond what I knew earlier…"
Skills	"…I see OER as a technical aspect, which you can incorporate into the course materials you are developing, to support both teachers and learners"
Attitudes	"…The culture is being 'changed'…People are being more 'open' and 'free'…"
Course Design	"…Now I understand the concept of OER through the lenses of course design concept …"
Motivation	"…It is an opening door to an enormous world, which provides us with the opportunity to find and incorporate resources…"
Satisfaction	"…It's a totally exciting work, a lot of enjoyments and motivations. I feel each step, each move as a way to success…"
Self-Confidence	"…I developed my self-confidence to organize and conduct this kind of a workshop…"
Application	"…I can influence my student teachers to find and use effective OERs in their classrooms…"
Team-spirit	"…I feel happy that we have collectively achieved something important, which at first seen as very difficult…"
Sharing Culture	"…Learning is happening in a 'shared' environment…through team work and peer reviews…positive attitude development…developing our capacity as a 'learning community'.."

These are but a selection of reflections from participants which clearly indicate the level of satisfaction gained by participants through this experience, and how their confidence developed in overcoming barriers and moving forward. From this experience, they seemed well-prepared to offer a transformative learning experience to their students who would one day themselves be preparing other teachers.

CONCLUSIONS

As part of this work, significant changes took place in participants' development of understanding around key concepts on OER and their relationships, with remarkable capacity building around a 'learning-centered' approach to course design, and confidence in the application of OER and ICT in their teaching. The 'compulsion' induced by carefully orchestrated project activities with targets, continuous facilitation, team work, and intrinsically driven motivation were the facilitating factors. Despite problems associated with finding and selecting relevant and high quality OER and their effective integration, technical skill limitations and time constraints, the participants' motivation to find solutions were exemplary. There is no doubt that the capacity of this group has been significantly enhanced. The seeds that were laid as part of this capacity building program are destined to benefit a new generation of future teacher educators through a cascading of effects from changing mindsets of younger academics in the Faculty and their acculturation into a transformed course design process.

This exciting journey for us and them has only just begun!

Acknowledgement

REFERENCES

COL (2011). UNESCO-COL Guidelines for Open Educational Resources (OER) in Higher Education [Online] Available URL: <http://oerworkshop.weebly.com/uploads/4/1/3/4/4134458/2011.04.22.oer_guidelines_for_higher_education.v2.pdf> Accessed 27.07.2013

Creative Commons. (2010). *About the licenses* [Online] <http://creativecommons.org/licenses/> Accessed 27.07.2013

Darkar (2000). *The Darkar Framework for Action* [Online]. <http://unesdoc.unesco.org/images/0012/001211/121147e.pdf> Accessed 27.07.2013

Ehlers, U.D. (2011). Extending the territory: From open educational resources to open educational practices. *Journal of Open, Flexible and Distance Learning, 15*(2), [1–10]. [Online]. <http://journals.akoaotearoa.ac.nz/index.php/JOFDL/article/view/64/46> Accessed 27.07.2013

Ertmer, P. & Ottenbreit-Leftwich, A.T. (2009). Teacher Technology Change: How Knowledge, Confidence, Beliefs, and Culture Intersect. AERA, 2009 [Online]. <http://www.edci.purdue.edu/ertmer/docs/AERA09_Ertmer_Leftwich.pdf> Accessed 27.07.2013

Fitzgerald, B. (2007). *Open Content Licensing (OCL) for Open Educational Resources* Paper commissioned by the OECD's Centre for Educational Research and Innovation (CERI) for the project on Open Educational Resources QUT, Australia [Online] <www.oecd.org/edu/oer> Accessed 27.07.2013

Fullan, M.G. (1993). The Professional Teacher: Why Teachers Must Become Change Agents *Educational Leadership* Volume **50** Number **6** March 1993 [Online]. <http://www.michaelfullan.ca/Articles_98-99/03_93.pdf> Accessed 27.07.2013

Geser, G. (Ed). (2007). Open Educational Practices and Resources: Roadmap 2012, [Online] <http://www.olcos.org/cms/upload/docs/olcos_roadmap.pdf> Accessed 27.07.2013

Hodgkinson-Williams, C. (2010). Benefits and challenges of OER for higher education institutions. [Online] <http://www.col.org/SiteCollectionDocuments/OER_BenefitsChallenges_presentation.pdf> Accessed 27.07.2013

Naidu, S. (2010a). Using scenario-based learning to promote situated learning and develop professional knowledge In E.P. Errington (Ed.). *Preparing graduates for the professions using scenario-based learning.* (39-49). Brisbane:Post Pressed.

Naidu, S. (2010b). Pedagogical affordances of technology. In S. Mishra (Ed.). Chapter 1. *STRIDE Handbook 8: E-Learning.* (4-13). New Delhi: IGNOU

Reid, K., Flowers, P. & Larkin, M. (2005) Exploring lived experience: An introduction to Interpretative Phenomenological Analysis. The Psychologist, 18:1, 20-23. [Online] <http://www.thepsychologist.org.uk/archive/archive_home.cfm/volumeID_18-editionID_114-ArticleID_798-getfile_getPDF/thepsychologist%5C0105reid.pdf> Accessed 27.07.2013

Simister, N. & Smith, R. (2010). Monitoring and Evaluating Capacity Building: Is it really that difficult? [Online]. <http://www.intrac.org/data/files/resources/677/Praxis-Paper-23-Monitoring-and-Evaluating-Capacity-Building-is-it-really-that-difficult.pdf> Accessed 27.07.2013.

Smith, J. & Osborn, M. (2003). Interpretive phenomenological analysis. In J.A. Smith (Ed.) *Qualitative psychology: A practical guide to research methods* (pp.51-80). London: Sage.