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Educational Technology Training: Staff Development Approaches

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ABSTRACT Globally, information and communication technologies (ICTs) are seen as one way of solving societal and business challenges. As a result, the South African Government identifies the use of ICTs in teaching and learning as one way of addressing societal and business challenges. Due to this call from the government, higher education institutions (HEIs) have invested and adopted ICTs, and the manner in which ICTs are understood and used (or not used) are institution-specific. However, adoption of ICTs has not been without challenges. As a result of these challenges, most HEIs have established a Directorate for e-learning that is tasked with staff development. Staff development approaches adopted are institution-specific and aimed at achieving a critical mass of staff that are competent to infuse and enhance the institution's capability to sustain the integration of technology. This paper presents staff development strategies currently being employed globally and at the Cape Peninsula University of Technology (CPUT) in preparing for integration of technology in teaching and learning, and CPUT lecturers' experiences of the initiatives. Qualitative methods were used to gather data and they were analysed inductively. A major finding was that CPUT uses strategies utilised elsewhere in other HEIs globally, and lecturers find them invaluable. The findings of this study may offer staff development options and insights for use by other HEIs in South Africa and elsewhere.

INTRODUCTION

The South African Government has identified the use of information and communication technologies (ICTs) for e-education (Department of Communications 2014) and for teaching and learning as an important priority in higher education and schooling (Ministry of Higher Education and Training 2012). Many higher education institutions (HEIs) have invested in and adopted ICTs for teaching, learning and assessment, as they believe that ICTs play a transformative role in higher education (Dahlstrom 2015). However, for many the investment has not translated into improved teaching, learning and assessment as lecturers continue to replicate the transmission method of teaching and learning, namely passive, teacher-centred and didactic instruction (Williams et al. 2011; Ng'ambi et al. 2012; Ng'ambi et al. 2016; Herrington et al. 2009). Furthermore, the investment is also linked to institutions' attention to training academics on the pedagogical values of these technologies (Dahlstrom 2015).

As a result, most research in educational technology/e-learning tends to focus on how to use technology effectively in teaching, learning and assessment, with very little being done regarding how lecturers are being trained in order to integrate technology appropriately in teaching and learning (Dysart and Weckerle 2015).

This paper documents staff development strategies currently being employed globally in preparing staff to integrate technology in teaching, learning and assessment; approaches being used at the Cape Peninsula University of Technology (CPUT), South Africa and CPUT lecturers' experiences of these staff development initiatives. The results offered in this paper will indicate staff development options that other HEIs in South Africa and elsewhere may find useful in learning and gaining insights on staff development strategies that can be helpful for their contexts.

Objectives of the Study

The objectives of this paper are:

1. To document staff development approaches/strategies used by HEIs globally to prepare academics to integrate technology effectively in teaching and learning. The findings will be used to compare and benchmark CPUT's staff development strategies with those of peer institutions and with those of institutions with educational technology maturity.

2. Often HEIs do not evaluate staff development initiatives, and if they do they don't always align institutional practices to the academics' needs. Therefore, the aim of this study is to assess CPUT lecturers' experiences of staff development initiatives for integrating technology into their teaching and learning, with the aim of improving the institutional practices based on academics' needs.

To achieve the intended objectives of this paper, the following questions are addressed:

1. What professional development strategies are currently being utilised globally to prepare lecturers to integrate technology in teaching, learning and assessment?
2. In comparison with strategies being used globally, which staff development strategies are being used at CPUT to prepare lecturers to integrate technology in teaching, learning and assessment?
3. What are CPUT's lecturers' experiences of these staff development strategies?

METHODOLOGY

A qualitative approach was adopted in this paper, with qualitative methods used to gather data. The methods used to track down literature were an extensive search of the World Wide Web, and systematic follow-up of key research texts related to the subject under investigation. In this overall search, relevant information was gathered from various sources such as Web documents, journal articles, books, master's and doctoral theses and library databases to ascertain staff development approaches currently being used globally to train lecturers to integrate technology appropriately in their practices.

Data gathered through document analysis was triangulated using data gathered at CPUT using an open-ended (qualitative) questionnaire. The questionnaire was administered online in 2014-2015 to academics at CPUT who had attended staff development initiatives during the previous 5 years, to determine their experiences of the development initiatives. Of about 800 staff members who had attended the training, only 40 participants responded. Data were analysed inductively (Miles and Huberman 1994).

Activities carried out during the survey were negotiated with the participants, and informed consent was sought from every respondent who agreed to participate in the study. Participants were also assured of anonymity. Ethical clearance was obtained from the Research Ethics Committee of the Fundani Centre for Higher Education and Development, which funded the project.

Limitations

The limitations of this paper are that only desktop and qualitative data are presented. Theoretical and critical grounding of the paper is not carried out, because this was not the aim of this study; these aspects will form part of future research by the researcher. Despite the above limitations, the findings reported in this paper will add invaluable knowledge to the field.

OBSERVATIONS AND DISCUSSION

Staff Development Strategies Currently Used Globally in Training Academics to Integrate Technology into their Practices: Findings

As indicated earlier, many HEIs have invested in and adopted ICTs for teaching, learning and assessment; however, for many the investment has not translated into improved teaching, learning and assessment as lecturers continue to replicate the transmission method of teaching and learning (Williams et al. 2011; Ng'ambi et al. 2012; Herrington et al. 2009). As a result, most HEIs in South Africa and elsewhere have established a unit/centre/directorate for e-leaning/educational technology (different terminologies are used) tasked with staff development (Dysart and Weckerle 2015).

Staff development approaches adopted are context- or institution-specific and aimed at achieving a critical mass of staff that are competent to infuse technology and enhance the institution's capability to sustain the integration of technology (Wilson and Stacey 2004). Staff development initiatives are also designed with the aim of accommodating lecturers as learners, recognise the long-term nature of learning, and utilise methods/strategies that are likely to lead teachers to improve their practice as professionals. In general, findings showed that staff development strategies employed by many HEIs across the world for training academics on how to integrate technology in teaching, learning and assessment were short courses offered either

online or face-to-face; action learning projects/project-based learning; websites/blogs/wikis; workshops/seminars (Wilson and Stacey 2004); accredited courses; localised peer support; show and tells; matching the levels of need of academic staff; and one-on-one staff development. A detailed description of the above staff development approaches is presented below.

Short Courses

Short courses (Dysart and Weckerle 2015) are normally informal and offered face to face, fully online, or through blended learning (partly face to face and partly online). They are aimed at imparting technological knowledge (lecturers need to have technical expertise in using technology, tools, and electronic resources), technological content knowledge (an understanding of how use of technology to present content can influence ways in which the content might be understood), pedagogical knowledge (lecturers' knowledge of the processes, methods and practices associated with teaching), and pedagogical content knowledge (the way in which lecturers are able to represent content knowledge in different ways to support students' prior knowledge (Mishra and Koehler 2006).

Fully online courses do not have the limitations of face-to-face courses and centralised workshops – for example, having to leave work to attend courses and lack of follow-up visits to participants after the training. Fully online course promote self-directed learning, with staff taking control of their own professional development, putting the academic staff member in the position of the online student (Devonshire and Phillip 2001; Dysart and Weckerle 2015; Powell 2010) and learning by example. This increases accessibility and enhances opportunities for interactions amongst staff, decreasing the amount of face-to-face workshops and providing opportunities for staff who are separated geographically to work collaboratively across institutions (Wilson and Stacey 2004), with sharing of staff developers' expertise across institutions**.** Massive open online courses (MOOCs) could be taken as an example of fully online short courses. Currently MOOCs are free; however, currently offering organisations are working on credentials – tests and accreditation that one can receive for a fee. Learners can take one topic of the course and exit if they are need- or goal-driven, or take specialised courses like those offered by Coursera (Bersin 2016), Digital Pedagogy Lab and Hybrid Pedagogy (MOOC MOOC: Instructional Design) (Morris 2016), that promote self-directed and active learning.

The Cape Higher Education Consortium (CHEC) emerging technologies short course offered since 2011 by educational technologists from the four HEIs in the Western Cape Province and taken by staff across these institutions is another example of a short course which uses a blended learning approach (Ng'ambi et al. 2013). One of CHEC's aims in offering the course is a focus on longer-term change processes in teaching and learning, capacity development in a field termed a scarce resource and building on-site communities of practice across the participating institutions. Intel Teach Elements and Modern Lessons (Lepi 2013) also offer short online courses on educational technology.

Action Learning Projects/Project-Based Learning

Action learning projects/project-based learning are normally used to pilot a new technological tool, resources or pedagogy. In these pilots lecturers/teachers volunteer to implement the tool, resources or the pedagogy in their courses. They are then properly trained on how to integrate the technology, resources or pedagogy in their courses appropriately. Since it is action learning, in-built formative evaluations are done, with results being used to improve the lecturers' practice. The results of these formative tests are written up and co-published with the participating academics. Final results of the pilot are used for decision making on whether the tool, resources or pedagogy add value in teaching and learning, and whether they should be scaled-up incrementally in the institution. Many HEIs in South Africa utilise this method when piloting a new technology or pedagogy.

Websites/Blogs/Wikis

In these platforms resources on how to integrate and use technology in teaching and learning are provided. Best practice examples on how some tools or pedagogies are used transformatively for teaching, learning and assessment are posted. The aim of posting resources in these platforms is to promote self-directed learning

amongst academics, as they can learn how to use technologies in teaching and learning by engaging with what has been done previously by others. The resources are also provided after workshops as reference materials and can be accessed anywhere and at any time. Lecturers are also given an opportunity to make contributions to the resources by adding their own experiences or just by commenting on the resources. Here are some examples: integrating technology into teaching at CPUT blog (Cape Peninsula University of Technology 2016); the World Bank EduTech blog (2016); and TEACH 100 (2016) which gives a daily ranking of education blogs.

Accredited Courses

Some institutions offer accredited certificates, postgraduate diplomas, bachelor's and master's degrees and doctorates in educational technology as a way of diffusion of staff development in new learning technologies (Wilson and Stacey 2004). The University of the Witwatersrand School of Education in Johannesburg, in association with GetSmarter (2016) is offering an online short course (12 weeks) in the strategic implementation of ICT integration in Education. The course is aimed at providing teaching professionals across the primary, secondary and tertiary sectors with the ability to assess and select appropriate technology to integrate into their teaching practices. The school also offers a B.Ed. Honours degree in e-learning and a Master's in Educational Technology (University of the Witwatersrand School of Education 2016a, 2016b). The University of Cape Town, School of Education offers a Postgraduate Diploma in Educational Technology and a Master's in Educational Technology (University of Cape Town 2016a, 2016b).

Some examples from other parts of the world include the University of Wisconsin-Stout School of Education (2016), which offers several online professional development courses on educational technologies; the Indira Gandhi National Open University School of Education (2016), which offers a postgraduate Diploma in Educational Technology aimed at developing a cadre of teachers and other professionals equipped with knowledge and skills for organizing teaching and training with the help of appropriate technologies. In Massey University, New Zealand (2016), a postgraduate Diploma in Education (e-Learning) is offered as a specialist qualification for educational professionals interested in the use of digital technologies in teaching and learning contexts; and the University of Roehampton London Online (2016) offers a Master of Arts in Technology and Learning Design. In some of the institutions completion of a certificate or postgraduate diploma in teaching and learning which includes teaching with technology is offered, and completion is linked to probationary requirements for all new lecturers.

Localised Peer Support

Localised peer support is a faculty-based approach to staff development situated in the context of the school or department (Wilson and Stacey 2004) – what Boud (1999) calls sites of academic practice. This academic development strategy acknowledges the centrality of workplace learning in the department or faculty that forms the context for most academic work. In this approach experienced lecturers in the use of technology in teaching and learning are required to work with and provide peer support to others engaged in adopting new technologies in their teaching, building on good practices that exist in the field and making connections with the pedagogical and disciplinary context in which teaching and learning takes place (Kukulska-Hulme 2012). Support is provided by colleagues (peers) with whom rapport has been established, since this offers a more sustainable form of support than centrally organised seminars and workshops (Kukulska-Hulme 2012).

Peer learning involves participants learning from and with each other in both formal and informal ways. It includes mutual benefits and a sharing of knowledge, ideas and experience amongst participants. The emphasis is on learning rather than teaching, and on the support and encouragement that learners offer to each other (Boud 1999). In South Africa, like elsewhere, most staff development activities are organised centrally within the institution, rather than being initiated at a departmental level. According to Kukulska-Hulme (2012) centralised staff development has the following disadvantages: it is not sufficient for internalisation of new practice and implementation in another context to occur fully; often there is little opportunity to practice new skills or ways of working; the colleagues who can support or undermine initi-

atives are rarely involved in such programmes; and new practices are often insufficiently contextualised to work in what might appear to be an alien environment.

Show and Tells

Show and tells (in our institution, termed the Teaching with Technology Day) are staff development events organised in some universities as a university-wide event and in others as a faculty event where lecturers using technology in teaching and learning share their experiences with their colleagues with an aim of celebrating innovative teaching and learning and motivating those not using technology in their practices. It is also utilised as an event to expose lecturers to new ideas, new ways of doing things, and new colleagues (Holt 2015; Crawford-Thomas 2015) who could provide peer support in the integration of technology in their teaching practice.

Show and tells are usually presentations/demonstrations from lecturers who are innovating in teaching and learning, showing how they have been using the latest technology in the teaching and learning of their students. They show a technology and tell why and how they used it in their practice. There could also be demonstrations on various tools in a computer room, where lecturers can drop in and watch (Holt 2015). These events motivate lecturers into thinking about how to use what they have seen to transform their subject delivery. To ensure that teachers don't forget all that they learn, show and tells are videotaped and uploaded in the institutional learning management systems (LMS) to ensure that lecturers can revisit the areas they are interested in. They are repeated once or more each year.

Workshops/Seminars

Workshops/seminars (Dysart and Weckerle 2015) as staff development initiatives are focused on the exploration of an idea and demonstration and modelling of skills of how to integrate a technology in teaching and learning. Most universities in South Africa and globally utilise these staff development strategies (Lawless et al. 2007). During these workshops (often aimed at reaching as many people as possible), staff are exposed to new ideas, pedagogies, technological tools and ways of using technology in teaching which can help them to introduce and build awareness about a technology, learning or new pedagogy.

Since workshops are one-time sessions and often without follow-up, they do not address the long-term developmental nature of learning and hence do not help lecturers sufficiently to build the range of skills and capabilities needed to use the new technology or pedagogy when they return to their classrooms (Dysart and Weckerle 2015). Integrating support for follow-up and coaching after the workshop/seminar may ensure effective changes in teaching and learning or in adoption of the technology or pedagogy. This may include one-on-one support between training sessions to allow for development of personal technology skills amongst faculty or a hotline for immediate problem-solving structure or support (Friel et al. 2009).

Matching Levels of Need of Academic Staff to Content of Staff Development

In this strategy of training staff in the use of technology in teaching and learning, the assumption is that professional development programmes are successful when the content of staff development is matched to levels of need of the academic staff members (Wilson and Stacy 2004). By using this strategy staff areas of weakness and strength are identified and recognised and the development needs of staff are addressed.

The strategy is divided into four levels. In level one, staff members are aware of the power of technology in teaching, lack experience, but have an interest in use of technology. Show and tells, short courses, guest speakers and exemplars are suggested to be the best staff development content and approaches for inducting them. In level two, academics have limited experience with teaching with technology and staff development strategies used for level one academics are recommended in addition to training in instructional design skills, pedagogy, LMS and its features, use of email, discussion forums and project-based learning. At level three, academics are more advanced than those in level 2; they explore and experiment with technology in their practices but may still lack some skills. Staff development strategies used in levels one and two are recommended, as well as introducing the academics to more complex technical skills and

types of interactivity, more intense discussion forums, and collaborative and case study teaching. In level four, the academics are competent and advanced in the use of technology for teaching and learning, and Wilson and Stacey (2004) suggest that these academics can be used as role models for others or resource persons, can be involved in facilitating staff development and are engaged in practice-based research.

In the South African higher education context the matching of levels of the needs of academic staff to content of staff development is highly applied in training staff members in the use of institutional LMS, especially academics at levels one to three.

One-on-One Staff Development

This strategy is also employed in most HEIs. Normally staff members make appointments or drop in at experts in the institution after training using any of the above strategies for further support on a tool or pedagogy. It is not cost-effective or sustainable to offer an entire training on a one-on-one basis, especially in contexts where few experts are available to serve thousands of academic staff members.

Staff Development Strategies Used at CPUT

Through primary data gathered using a survey questionnaire containing open-ended questions, findings showed that the following staff development strategies were employed at CPUT.

Action Learning Project/Project-Based Learning

Research proposals are written and funding to pilot technologies for teaching and learning is sourced – for example, use of podcasting, tablets, digital stories and open educational resources for teaching and learning; and digital literacies.

Short Course

Institutional Teaching Development Programme

This non-credit-bearing short course on aspects of teaching and learning is offered to CPUT staff members who have no teaching qualification. It is hoped that during this course the use of technology in teaching and learning is modelled to the lecturers, and that they are exposed to some of the technologies they can consider using in the teaching and learning of their students.

CHEC Course on Emerging Technologies

This cross-institutional formal course was designed in 2011 by educational technologists from the regional universities to train staff members from the four HEIs in the Western Cape on appropriate integration of technology in teaching and learning.

Show and Tells

Show and tells, according to Dahlstrom's 2015 study, were reported to be one of the staff development initiatives which motivate academics to use technology in their practice. At CPUT we have the CPUT Teaching with Technology Day, a yearly event organised for lecturers innovating in teaching and learning using technology to share their practices with peers (Dysart and Weckerle 2015). The event is aimed at celebrating and acknowledging what staff members are doing and, more importantly, at motivating staff members who are not yet using technology in their practices. The event also exposes staff members not using technology to peers who can assist them in integrating technology in teaching and learning.

Workshops/Seminars

Monthly workshops/seminars which expose lecturers to new technologies and the affordances they can offer for teaching and learning are hosted by faculties as a way of marketing and ensuring that staff members from the hosting faculty are aware of the possibilities of using technology in their teaching. They also make them aware of the kind of support available at the institution in case they choose to integrate the technology into their teaching and learning.

Matching Levels of Needs of Academic Staff to Content of Staff Development

This is used in training of academics in use of the LMS. Basic, intermediate and advanced training on Blackboard, the institutional LMS, is

provided. The basic training fits into level one and intermediate and advanced training fits into levels two and three respectively. This training is offered through institutional fixed dates, on demand from departments.

One-on-One Training

One-on-one staff development is also used on a needs basis. After receiving training using any of the above six strategies, lecturers make appointments with or just drop-in to the instructional designer and educational technologies officers to receive further support on any educational technology issue they may be grappling with.

Lecturers' Experiences of the Staff Development Initiatives

In the open-ended survey questions lecturers were asked what they liked or disliked and the challenges they experienced in accessing the staff development interventions. The researcher discusses the findings below.

What Lecturers Liked and Disliked

Most (28) of the lecturers who responded to the survey questionnaire indicated that they liked the fact that the staff development strategies were varied, relevant and provided up-to-date information, as indicated in the following extracts:

Extract 1: Good variety, relevant and up to date

Extract 2: I love the inclusiveness of these workshops – regardless of your prior knowledge, you are always accommodated

Extract 3: Extremely informative. The opportunity to practice and learn hands-on allow you to transfer the skills learnt during these sessions.

Lecturers liked the fact that a platform for engaging with technology was provided for them in the institution. They further pointed out that this equipped them with innovative teaching skills. These findings are in agreement with Dahlstrom's (2015) study on educational technology and faculty development in higher education, which reported that training faculty on the use of technology is related to more positive impressions about technology for teaching and learning. Additionally, academics felt that they would be better prepared to integrate technology in their courses.

However, some of the lecturers indicated that they did not like the way the workshops were carried out, that is, being focused more on theoretical aspects than practical, a more technical focus without being driven by pedagogy (LMS), and the fact that technological training was offered that did not fit the respondents' disciplines (Dysart and Weckerle 2015). Dahlstrom (2015) advocates that supporting mainstreaming of technologies in teaching and learning requires provision of technologies and the pedagogical training required to appropriately use the technologies. Dysart and Weckerle (2005) state that research indicates that technology- related staff development opportunities often lack pedagogy and do not often address discipline specific integration of technology. The researcher argues that different technologies maybe suitable for some disciplines and unsuitable for others and academics should be equipped to be able to select technologies suitable for their disciplines.

Challenges Experienced in Accessing the Staff Development Interventions

Although the majority of the lecturers were positive about CPUT staff development initiatives, 10 respondents indicated that they could not attend the training because of lack of time as they were teaching at a distance campus and had heavy workloads, and the training was scheduled during teaching time:

Extract 1: The timing is always clashing with my lectures and I feel frustrated that I cannot make use of this awesome and excellent service and opportunities whilst still delivering to my students

Extract 2: Due to lecturing commitments at a distance campus, unable to attend many of the Workshops

Lack of time to attend staff development activities and time to gain confidence in using the technology is given in the literature consulted in this study as one of the barriers to lecturers' integration of technology in teaching and learning. Another challenge raised by the majority (22) of the respondents was that the unstable information technology (IT) infrastructure in the institution hindered staff members' implementation of what they learned in the staff development initiatives, as evidenced in the following extracts:

Extract 1: If Blackboard was more up and running I would have been able to use it more. It is more down than up. Its slowness is also frustrating and impacts negatively on me using it for teaching purposes

Extract 2: Most of the exceptional methods taught not possible to implement with an IT system and support that are more or less non-existing

The above results are in agreement with Holt (2015) and Dahlstrom's (2015) findings that one of the greatest barriers to integration of technology in teaching and learning is staff's lack of confidence in the technology itself/IT infrastructure. Lack of IT support highlighted in extract 2 was voiced by a good number of respondents (22). Closely linked to this point, most respondents indicated that there was lack of follow-up support services after the training, which hindered implementation of the new skills learned:

Extract 1: Yes very appropriate [training strategies] for my needs and URGENT in Education BUT NO support!! Such a dire pity!!

Extract 2: Yes, but there is not enough support after courses are presented

The study by Dahlstrom (2015) highlights the significance that academics attach to institutional support, whether technical or pedagogical, in technology integration in the classroom (Dysart and Weckerle 2015). Dysart and Weckerle (2015) further state that scaling of content specific pedagogical and technological support to different disciplines where support structures are centralised can be a challenge due to lack of enough resources for offering support. Lack of awareness of the staff development initiatives was also raised by a good number of respondents (15):

Extract 1: They need to be advertised. I did not know you had monthly meetings [workshops]

Extract 2: Did not know when they were

Extract 3: It seems that only particular staff members are selected to be a part of these projects [action learning projects], and they are constantly involved. Others are not invited to participate.

As a result of the lack of awareness of the staff development initiatives, some of the staff members have misconceptions that only certain staff members are invited to participate in the action learning projects. Regarding lack of awareness of the initiatives, CPUT needs to evaluate their marketing strategies and use the results to improve awareness, to ensure more academics are aware of the opportunities and attend the training (Dahlstrom 2015).

The overall findings reveal that CPUT is employing staff development strategies being employed in other institutions in the world, bearing in mind that adoption of these strategies is context- specific. CPUT also employs a variety of opportunities for professional development, as supported by Dysart and Weckerle (2015).

CONCLUSION

The paper highlights staff development strategies employed in HEIs globally to empower lecturers in the integration of technology in teaching and learning. Institutions use a mixture of staff development strategies to address their contextual needs. The paper further highlights the staff development strategies used at CPUT, indicating that CPUT utilises staff development strategies that are also used in other HEIs in the world.

The findings demonstrate that most of the CPUT staff find the staff development strategies to be of value for their continuous learning. Lack of time to attend training, unstable IT infrastructure, lack of technical and follow-up support after training and lack of awareness of the existence of the staff development activities were highlighted as some of the barriers to their participation and implementation of what is learned at the staff development interventions.

RECOMMENDATIONS

To encourage those not aware of the staff developments initiatives to attend training, a rigorous marketing strategy is needed in the institution. Regarding the unstable IT infrastructure, the institution needs to discuss and try resolving these issues as many lecturers worry about the technology letting them down during their lessons. The need for technical and follow-up support after training cannot be overemphasised in order to enable lecturers to implement what is learned in the staff development initiatives.

Furthermore, staff suggested that a short course grounded in pedagogy as a first priority and followed by technology training should be offered, because during the workshops/seminars too much information is provided in a two-hour

session. A short course would help in that regard, and the setting up of local peer-support groups in faculties and departments was voiced as necessary for supporting each other, sharing their experiences with others, and creating a community of practice in integrating technology in teaching and learning. This would go a long way to allowing buy-in and integration in the departments.

The researcher holds the opinion that lecturers must be part of the decision-making process with respect to the implementations of ICT innovations in universities, so that they may commit to the innovation with conviction, and so that the training offered is relevant for them. Hence, the researcher recommends that the institution should take into consideration lecturers' inputs in the efforts to improve staff development, and in the choice of staff development strategies.

In addition, professional development activities should provide academics with pedagogical and technological skills that are applicable, meaningful and relevant to each variety of discipline. In this way academics will be well prepared for successful implementation that can be sustained beyond the training event.

Regarding the lack of awareness of staff development opportunities voiced by some academics, the author echoes Dahlstrom (2015) in suggesting that CPUT should regularly evaluate the effectiveness of the marketing strategies and use the findings to improve the marketing campaign to ensure that a critical mass of academics know about the training activities.

The findings of this study could be used by the institution to inform their strategic planning on staff development approaches, and how IT resources are used to improve teaching and learning. Furthermore, by using the findings of this study the institution can examine the association between offering certain types of staff training and staff or lecturer perceptions of the technology for teaching and learning.

REFERENCES

Bersin J 2016. Use of MOOCs and Online Education is Exploding: Here's Why. Forbes. From <http://www.forbes.com/sites/joshbersin/2016/01/05/uses-of-moocs-amd-online-education-is-exploding-heres-why/> (Retrieved on 11 January 2016).

Boud D 1999. Situating academic development in professional work: Using peer learning. *Int J Acad Dev*, 4(1): 3-10.

Cape Peninsula University of Technology 2016. Integrating Technology in Teaching at CPUT. From <http://www.cput.ac.za/blogs/edutech/> (Retrieved on 26 August 2016).

Crawford-Thomas A 2015. Five Steps for Embedding Technology Use in Colleges.JISC. From <https://www.jisc.ac.uk/blog/five-steps-for-embedding-technology-use-in-colleges-28-jan-2015> (Retrieved on 12 January 2016).

Dahlstrom E 2015. *Educational Technology and Faculty Development in Higher Education: Research Report*. Louisville, CO: ECAR.

Department of Communication 2014. National Integrated ICT Policy Green Paper: Government Notice, Pretoria. From <http://www.gov.za/sites/www.gov.za/files/37261_gon44.pdf> (Retrieved on 25 August 2016).

Devonshire L, Philip R 2001. Managing Innovation and Change in Flexible Times: Reflecting on the Role of the Educational Developer. *Paper presented at the Open and Distance Learning Association of Australia (ODLAA) 15th Biennial Forum*, Sydney, New South Wales, September 14 to 21, 2001.

Dysart S, Weckerle C 2015. Professional development in higher education: A model for meaningful technology integration. *J Info Tech Educ: Innnov Pract*, 14: 255-265.

Friel T, Britten J, Compton B, Peak A, Schoch K, Van Tyle WK 2009. Using pedagogical dialogue as a vehicle to encourage faculty technology use. *Comput Educ*, 53: 300-307.

Herrington J, Herrington A, Mantei J, Olney I, Ferry B 2009. Using mobile technologies to develop new ways of teaching and learning. In: A Herrington, J Herrington, J Mantei, I Olney, B Ferry (Eds.): *New Technologies, New Pedagogies: Mobile Learning in Higher Education*. Volume 9. Faculty of Education. Australia: University of Wollongong.

Holt A 2015. Days of Staff Development, Are they Effective? Talking Technology in FET and Skills. From <http://incentive-8.info/2015/03/17/days-of-staff-development-are> (Retrieved on 28 August 2016).

Indira Gandhi National Open University School of Education 2016. Postgraduate Diploma in Educational Technology. From <http://www.ignou.ac.in/ignou/aboutignou/school/soe/programmes/detail/76/2> (Retrieved on 26 August 2016).

Kukulska-Hulme A 2012. How should the higher education workforce adapt to advancements in technology for teaching and learning? *Internet Higher Educ*, 15(4): 247-254.

Lawless KA, Pellegrino JW 2007. Professional development in integrating technology into teaching and learning: Knowns, unknowns, and ways to pursue better questions and answers. *Rev Educ Res*, 77(4): 575–614.

Lepi K 2013. 9 Places to Find High-Quality Online Professional Development: Intel Teach Elements and Modern Lessons. From <http://www. edudemic.com/high-quality-online-professional-development> (Retrieved on 26 August 2016).

Massey University New Zealand 2016. Postgraduate Diploma in Education (e-Learning). From <http://www.massey.ac.nz/massey/learning/programme-

course-paper/programme.cfm? prog_id= 93057& major_code=2828> (Retrieved on 26 August 2016).
Miles MB, Huberman AM 1994. *Qualitative Data Analysis*. 2nd Edition. Thousand Oaks: Sage.
Ministry of Higher Education and Training 2012. *The Green Paper for Post-School Education and Training*. Pretoria: Government Printer.
Mishra P, Koehler MJ 2006. Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6): 1017-1054.
Morris SM 2016. MOOC MOOC: Instructional Design. Digital Pedagogy Lab and Hybrid Pedagogy. From <http://www.digitalpedagogylab.com/mooc-mooc-instructional-design/> (Retrieved on 11 January 2016).
Ng'ambi D, Gachago D, Ivala E, Bozalek V, Watters K 2012. Emerging Technologies in South African Higher Education Institutions: Towards a Teaching and Learning Practice Framework. In: *Proceedings of the 7th International Conference on e-Learning*. The Chinese University of Hong Kong, Hong Kong, June 21 to 22, 2012.
Ng'ambi D, Bozalek V, Gachago D 2013. Converging institutional expertise to model teaching and learning with emerging technologies. *Progressio*, 35(3): 19-36.
Ng'ambi D, Brown C, Bozale V, Gachago D, Wood D 2016. Technology enhanced teaching and learning in South African higher education - A review of a 20 year Journey. *Br J Educ Technol*, 47(5): 843-858.
Powell T 2010. What motivates faculty to adopt distance learning? *Int J Adv Life Sci*, 2(3/4): 173-187.
TEACH 100: Blog 2016. From <http://teach.com/teach 100> (Retrieved on 26 August 2016).
University of Cape Town 2016. A Postgraduate Diploma in Educational Technology. From <http://www.education.uct.ac.za/edu/pgdip-et> (Retrieved on 26 August 2016).
University of Cape Town 2016. Masters in Educational Technology. From <http://www. education.uct.ac.za/med-educational-technology> (Retrieved on 26 August 2016).
University of Roehampton London Online 2016. Masters of Arts in Teaching and Learning Design. From <http://info.roehampton-online.com/programmes/education/master-of-arts-in-technology-and-learni ng-design?dskwid=43700005 261110893&comm_ code= 4239600&infinity=i ct2~net~gaw~ar~8352 777 3260~kw~ masters%20of% 20educational% 20 technology~ mt~b~cmp~Programmes% 2BS PART % 2 BENG%2 BAFRI%2BZA~ag~ZA%2 BEDU%2 BMSED%2BIDT%2BMS%2 BNON%2 BPSF% 2B Educational+Technology+ Masters% 2BBROAD &gclid=CJf7iNL wocoCFQw 6Gwod Qo UBYQ&dclid= COn2zd Lwoco CFQmoFgod5 NUEuw> (Retrieved on 26 August 2016).
University of Wisconsin-Stout School of Education 2016. Online Professional Development Courses on Educational Technology. From <http://www.uwstout.edu/soe/profdev/courses.cfm> (Retrieved on 26 August 2016).
University of the Witwatersrand School of Education in Association with GetSmarter 2016. Short Course. From <http://wits.getsmarter.co.za/wits-teaching-technology-online-short-ourse/?utm_source=PPC&utm_medium=adwords_ppc &utm_campaign=TT&gclid=CJDKxI2 yocoCFUHnwgodcQo MLg> (Retrieved on 26 August 2016).
University of the Witwatersrand School of Education 2016. BEd Honours Degree on e-Learning. From <https://www.wits.ac.za/education/academic-programmes/postgraduate/bed-honours/bed-hons-specialisms/#EDUC4032> (Retrieved on 26 August 2016).
University of the Witwatersrand School of Education 2016. Masters in Educational Technology. From <https://www.wits.ac.za/education/academic-programmes/postgraduate/med/med-in-educational-technology/> (Retrieved on 26 August 2016).
Williams R, Karousou R, Mackness J 2011. Emergent learning and learning ecologies in web 2.0. *Int Rev Res Open and Distance Learning*, 12(3): 39-59.
Wilson G, Stacey E 2004. Online interaction impacts on learning: Teaching the teacher to teach online. *Austral J Educ Technol*, 20(1): 33-48.
World Bank 2016. EduTech Blog. From <http://blogs.worldbank.org/edutech/> (Retrieved on 26 August 2016).

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