Framing Professional Development in Information and Communications Technologies: University Perspectives

Johnnie Wycliffe Frank Muwanga-Zake
University of New England, Armidale,
New South Wales, Australia

jmuwanga@une.edu.au

Abstract

The proliferations of Information and Communications Technology (ICT) and an increase in the number of external students and of the digital youth have put considerable pressure upon university staff to adopt ICT in their pedagogy. However, these challenges that include ICT technical skills and pedagogy require staff to continuously engage in Professional Development (PD), which might require revisions of work agreements. Staff have to change their pedagogical paradigms This paper proposes PD models and suggests that IT specialists and Administrative Assistants should be involved.

Keywords: Professional Development, University, Instructional Design, ICT, Blogging

Introduction

ICT professional development can enable transformative change in teaching practice (Russel as cited in Prestridge, 2007). One of the challenges includes transformation of pedagogy instead of just a change of tools. For example, a change from a behaviourist use of a chalkboard to a constructivist utilisation of an Interactive White Board (IWB) incorporates a change of tools and technical skills as well as a shift of pedagogy. A further challenge is, therefore, deciding which ICT to adopt on the basis of pedagogy versus modernist progressivism of ICT. Thus, universities such as the University of New England (UNE) are under pressure to equip themselves with cutting edge ICT that supports desirable pedagogy. While all staff is expected to pass on ICT skills, which graduates would need in the world of work, teacher-training staff is required to use ICT in a pedagogically sound framework that is exemplary for the future teachers to emulate. In this regard, studies in the USA reveal a need for extensive training of teachers in the use ICT to cater for digital natives (Cairncross & PÖysti, 2003, p. 10). (Digital natives are those who have grown up with technology.) Consequently, it is rational for the School of Education to be more serious with ICT pedagogical applications and to design ICT Professional Development (PD) that rigorously focuses on pedagogy among other things. This paper discusses the challenges and processes of PD, based upon observations at the School of Education, UNE. Proposals for PD in light of the experiences are given at the end of the paper.

Context

As a member of the ICT team in the School of Education at UNE involved in staff PD, I present data about: the way staff used blogs over a period of one year (from March 2007 up to March 2008); the requisitions for support which staff made to the ICT team; workshops which the ICT team organised; and 9 out of 84 students' comments about their engagement with online material. I also mention the attempts towards using podcasts, based on consultations with staff either through workshops or by one-to-one discussions. The collection of data is continuing, as is the development of this document.

Background

The head of the School of Education has relentlessly stated the desire for staff to use ICT so as to enhance constructivist and active learning for the students, to the extent that my appointment into the school was specifically tied to PD. The objective of PD in ICT is to support the School of Education to engage its huge number of off-campus (external) and on-campus students through pedagogically effective ICT use. Not withstanding the rapid ICT change, staff state that they are normally too busy to the extent of limiting their ICT use to basic needs. The UNE as a whole has a department that is concerned with PD of staff, including ICT. The site about "Using Technology" at http://www.une.edu.au/training/ut.htm lists applications for which staff could gain competence. Another university unit, the Teaching and Learning Centre (TLC) is responsible for developing online materials, also for the whole university. My work specifically focuses on PD in pedagogical uses of ICT, although I also train staff in ICT technical skills.

Literature

Costs involved in adopting ICT in education demand clear feedback on their impacts upon learning (Thorpe, 2002, p. 21). However, besides issues of reliability (Ciarncross & PÖysti, 2003, p. 19), *new initiatives are launched with little evidence on the impact* (Watson, 2001, p. 253). Literature about ICT potential in education is abundant (e.g., Gredler, 2001, p. 537; Minaidi & Hlapanis, 2005, p. 241- 243; Muwanga-Zake, 2007a; Whittier & Lara, 2006, p. 3), but is often short of practical exemplars that staff could imitate. Thus, potential users rely upon information from ICT experts to make judgements about ICT use. Furthermore, the unique student and staff profiles, as well as differences in ICT equipment, demand inimitable PD and innovations. Hence, each university has to research for and implement its own solutions and then provide accountability to its stakeholders.

ICT, as the name implies, is popular for disseminating information. The challenge to staff is to use ICT effectively to the extent that students can translate information into knowledge. Although there are numerous benefits from posting lecture notes, Ciarncross and PÖysti (2003, p. 19) advise academia to go beyond and include constructivist collaboration. Whitaker & Coste (2002, p. 55) note instances of shallow ICT delivery, which leads to a tendency among students to surface-level skimming of information. The explanation for this dilemma given in Watson (2001) is that there is often lack of clarity due to a dichotomy of purpose: computer studies have their own conceptual knowledge and skills base, while at the same time staff require the understanding of pedagogical implications of using them. The later seems to be more challenging (Whitaker & Coste, 2002, p. 1), especially since the evaluation of ICT-based pedagogy that is vital prior to adopting an ICT requires staff to firstly understand its nature and form so that, according to Sims, Dobbs, and Hand (2002), staff can shift pedagogical frameworks for ICT support. In addition, there is normally lack of access or time for staff to explore the use and to become experts of ICT, while those that are technically challenged feel embarrassed to use ICT.

Other factors that require attention, identified in Watson (2001, p. 261), include the following:

- Curricular integration is complex and differs with styles of teaching;
- Some staff members feel isolated and so resent and reject ICT;
- Lack of administrative support and of ownership of PD leads to ad hoc ICT use, which discourages staff;
- Failure of technology to work or to impart claimed advantages; and
- Symbolism of technology: a mythical image of the new, positive change and renewal (with terms such as revolutionary, powerful ideas, microworlds, and student empowerment) tends to scare potential users

The argument is that the symbolism through the techno-centric culture associated with modernistic cutting edge progressivism distorts the actual potential of ICT in claiming that computational information processing is knowledge ready for a student. Techno-centricity is thus responsible for instrumental rationality and dominance of training in skills at the expense of attention to pedagogy. Consequently, potential users reject the symbolic functionality of ICT as too removed from the professional purpose of education, and organisations face difficulties in trying to achieve successful PD in the use of ICT (Neville & Fitzgerald, 2002, p. 1), and Watson (2001, p. 263) concludes that staff must contribute towards educational change as a context for ICT. In support, Conlon (2000) proposes two hypothetical visions of PD in ICT use, post-modern and paternalistic, as bases for staff to take ownership of their vision of change with emphasis on pedagogy.

Since staff PD in ICT use is essentially for the ultimate benefit of students, it is important to consider students' opinions and challenges. In that regard, authors such as Ciarncross & PÖysti (2003, p. 20) look at the use of online ICT from a student's point of view. External students in the USA have found problems with streaming video lessons, partly due to students' lack of understanding of how to configure their computers for video applications and the necessary specifications of computer hardware and software.

PD would obtain from traditional models of Instructional Design (e.g., Dick & Cary, 1990), except that ICT are introduced at UNE prior to a needs analysis. In a situation where ICT have already been acquired, two PD models, among many others, seem post-modern, applicable and compatible, as well as providing opportunities for innovation. One PD model is Davis's 'Conceptualisation of User Acceptance Constructs' model (Neville & Fitzgerald, 2002, p. 194), which suggests causative relationships between Ease of Use (EOU) and Perceived Usefulness (PU): i.e., the usefulness of a technology is perceived after achieving skills (Figure 1).

Some notable areas of adoption of Davis's model in Neville & Fitzgerald (2002, p. 197) include:

- Initial generic training phase to ensure that all participants achieve a reasonable level of literacy in ICT;
- Allocating participants to a group based on their level of ICT capability. This would reduce the possibility of embarrassment;
- Short training sessions – not more than 2 hours; and
- Small number of participants to ensure attention to all participants' performance and to monitor progress easily
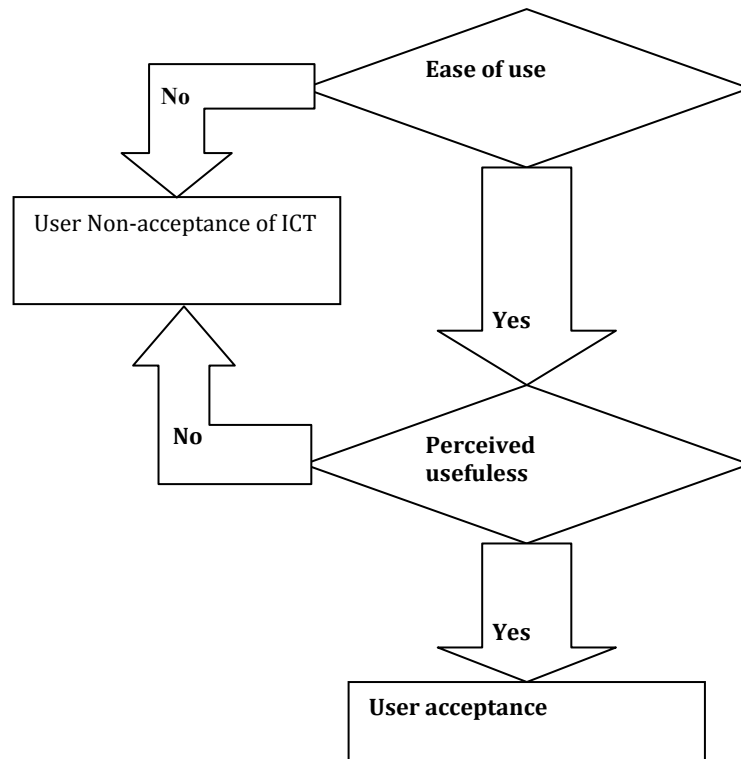
Figure 1: Davis' Conceptualisation of User Acceptance Construct

Another model comes from Prestridge (2007, p. 12) (Figure 2).
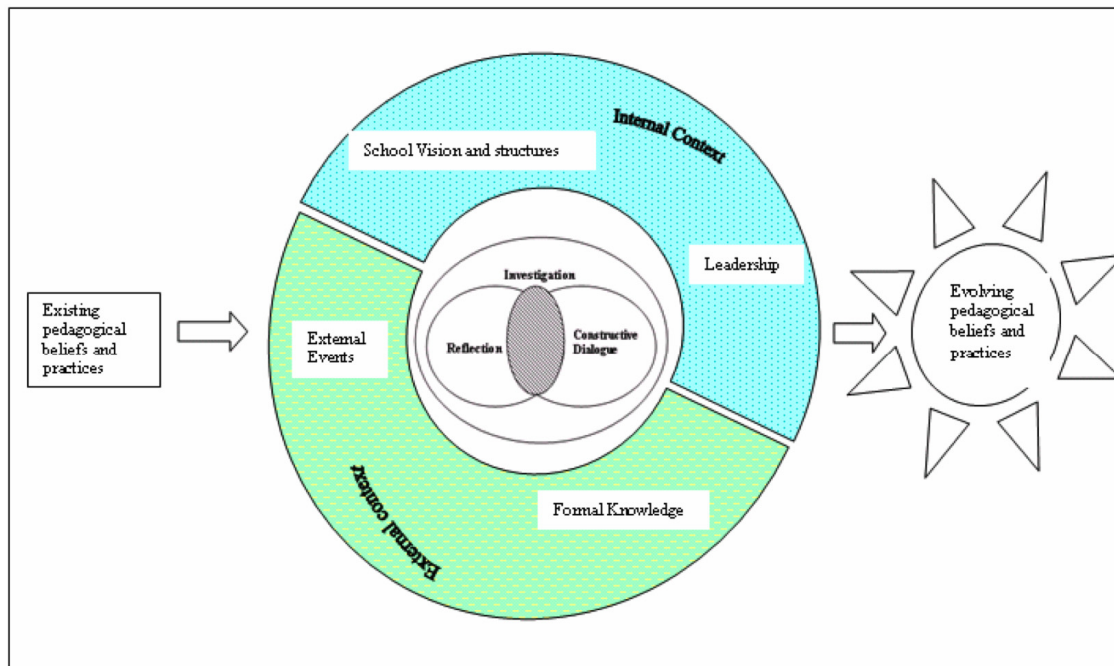
Figure 2: Prestridge's PD model

The advantage of this model over Davis's model is its consideration of the school vision, leadership for PD, and the engagement framework – in this case, constructive dialogue during PD activities. Prestridge also considers the need to investigate "existing pedagogical beliefs and practices" among staff before PD and then constructing with staff new pedagogy around ICT, in a way that Conlon (2000) describes as paternalistic. The two models in combination would target an ICT at a time (Whitaker & Coste, 2002, p. 55).

Observations and Activities in the School of Education at UNE in Relation to ICT PD

Activities of the ICT team in the School of Education

UNE generally, and the School of Education in particular, had implemented ICT professional development initiatives prior to 2007 through the ICT team in the School of Education. These initiatives comprised ad hoc training according to the needs of each individual staff or workshops upon the prerogatives of the ICT team or the technical team of the university. In both cases, the focus was on ICT skills and pedagogy. However, as ICT continues to change, staff require new skills and reconsideration of pedagogical strategies on a continuous basis.

The ICT team was thus concerned about the rate of staff PD and innovations in ICT pedagogy in relation to the speed at which ICT were changing and complained about low staff workshop attendance. Therefore, through a series of meetings during 2007, the ICT team designed PD frameworks. For example, a weekly publication about ICT events in the school that announced contacts for specific ICT expertise and course materials was started. The team also decided to record the requests staff made to the ICT team (Table 1). Data would show the areas for which staff most needed support.

Table 1. Support staff requested – August to October, 2007

Support on	Total time in hrs	Frequency
Formatting & Graphics	1.25	1
Set up videoconferencing	1	1
Word	4	3
Burning CDs	.5	1
EDIT 312 and online learning	4	2
Embedding music into PowerPoint	.33	1
Wiki	4	2
Ms. Excel	3	1
Windows	.25	1
iMovie	6.5	2
Garage band	1	1
IWB	4	2
WebCT	2	1
Blogging	2	2
TOTAL	29.83	

One important aspect to note in Table 1 is the frequency column. Need for support for "Word" had the highest frequency (3). "Word" is probably one of the commonly used applications for word processing, and one would expect staff to be well acquainted with it. Following "Word" were a Course EDIT 312 and Online learning, Wiki, iMovie, the IWB, and Blogging, each with a frequency of 2. These are not necessarily common in the course of teaching, so the more technically oriented or interested staff mostly sought these. Those single requisitions for support from individuals point at varied needs. Thus, the table paints a picture of a mix of staff profiles: from highly interested and innovative to those that are probably still trying to catch up. One implication is that staff would rather be engaged at an individual one-to-one basis.

Another strategy by the ICT team was to organise workshops. Three workshops were organised. One was on Excel, another was on the Smart Board, and another on the Interactive White Board (IWB). The Excel workshop included managing and presenting data, for example, in processing student's marks and reports. It attracted enthusiasm and serious questions from staff. Sessions about the Smart Board also attracted serious interest and innovative ideas about the ways in which it could support constructivist pedagogy, especially when used together with Personal Response Systems. Two sessions on the IWB were conducted at 3 weeks apart during 2007. The first session focussed on the technical skills, while the second focussed on the pedagogy in using an IWB. Staff appeared interested but the number dropped between the first and second session. The second session attracted deep reflections between those who believed that technology would lead the way in determining pedagogy and another group who thought that we had to be cautious in leaving things to technology and digital natives.

Student's Concerns Reflect on the Way Staff Organises ICT

On the 2nd May 2008, I posted a discussion topic raising my concerns about low Sakai forum postings from a group of external students in one Learning & Teaching unit. The topic was "Low Postings on Thinking about Learning." Nine students responded out of 84. Four of the 9 stated that they were quite busy and were still trying to catch up with the course. Five had this to say:

> *i. Mar 4, 2008 0:28 AM*
>
> *This new sakai format is just a bit overwhelming. I know personally I have 5 subjects. All are set up differently. All require weekly postings. All have hundreds of new forum postings per week. It is very time consuming to try and get through the forums and chat records, sorting the wheat from the chaff, so to speak. … . Then there is the IT issue, I just had 24 hours that I couldn't logon and most of the last weekend the server was apparently "crashing".*
>
> *ii. Mar 5, 2008 2:35 PM*
>
> *I am doing 5 subjects, and this sakai system really s… me to tears, it always is having some problem of some sort. WHY can't all the subjects in the UNE use MyUNE, WebCT?*
>
> *iii.. Mar 5, 2008 9:58 PM*
>
> *Unfortunately the three better organised units I have (I have four units) in Sakai have been overtaken by the one ridiculously unorganised and time consuming unit (and ... sorry to say... unhelpful co-ordinator).*
>
> *iii. Mar 6, 2008 5:21 AM*
>
> *I have had endless trouble with the new system.*
>
> *iv. Mar 6, 2008 11:46 AM*
>
> *Problem for me has been getting used to this system, (another technically challenged student), coupled with computer problems, Sakai problems.*
>
> *iv. Mar 14, 2008 2:07 PM*

like all of you, trying to get used to this new Saki system.

v. Mar 18, 2008 9:56 AM

… i was having trouble understanding the set up of this site and understanding what group i was in, …

Internal students raised similar concerns in tutorial discussions. A notable concern was the variance in the design of the way each course was presented on Sakai, which required students to look in different places for particular information and activities for each course. The other apparent issue was for students to know how responsibilities were divided between academic staff coordinating the courses and the university IT team with regard to Sakai.

One of the possible causes of such problems among students appeared to be a need for staff to experience further online learning – i.e., staff needed to look at the courses from a student's position. Indeed, staff are to-date concerned about what their students see, for example, when the student logs on Sakai. PD training does not happen through online delivery either. Furthermore, beyond a student's control, also noted by Ciarncross & PÖysti (2003, p. 20) in the USA, were difficulties with Internet connections, which calls for using alternative means of information delivery to students as a matter of equity (for example, by posting CD ROMs). Additionally, downloading lessons is related to file formats staff use to prepare those files. These problems show the need for the IT team to research file protocols that would be easier to store, small enough for streaming, and qualitative enough for the kind of pedagogy desired, as well as for a particular subject. Teacher-trainees are fortunately taught ICT skills.

A Survey on Blog Use

In another project at UNE, two UNE staff colleagues and I started investigating the use of blogs. We sampled blogs in March 2007, and then 12 months later in March 2008. Among the important interim findings are that students did not blog academic discussions, while staff used blogs as information delivery tools.

Table 2 shows a majority of blogs belonging to the personal category (59%). The Administration follows in the number of blogs. Information for students specifically was just 9%. Additionally, only one blogger at UNE invited students for serious academic discourse.

Table 2: Summary of blogs at UNE, as on the 8ᵗʰ March 2008 (Number of blogs = 34)
Key: Numbers represent percentages

Category		%	Information for				Started			Survival in months (inception to last post)				
			About an individual	*Student*	*General*	*Not clear*	*2006*	*2007*	*2008*	*Less than 2*	*2-4*	*5-7*	*8-12*	*Greater than 12*
Personal		59	44		12	03	03	44	12	21		03	09	26
Administration		24	-	06	18	-	06	12	06	03	06	03	03	09
Faculty / School	Educ.	06	-	03	03			03	03	03				03
	Arts	03			03				03		03			
Society / group		09			09			09				03	03	03
Total			44	09	45	03	09	68	24	27	09	09	15	41

It is notable that Faculties or Schools were not keen on starting blogs, while blogs about individual concerns (44%) were the highest. Blogs about "General Information" scored 44% - this was information not directed to any particular audience.

Regarding the rate of starting blogs, Table 2 shows 9% of blogs (n = 3) were opened during 2006, and this means during the first 3 months of blogging since blogging at the UNE started in October 2006. Then 68% of blogs (n = 23) opened during 2007 (i.e., over a period of 12 months). A second sampling of blogs at the UNE happened during March 2008. Therefore, Table 2 additionally shows that 24% of blogs (n = 8) were opened in the three months, from January to March 2008. At that rate, there would be 24 blogs opening in 2008. Thus, the rate of opening blogs in 2007 might equal to that in 2008, both of which are lower than the rate during 2006 when blogs were introduced. However, additional information not appearing in these tables shows that 10 blogs had been opened between January and March 2007 (first sampling was done in March 2007), which is higher than the 8 opened between January and March 2008 (second sampling was done in March 2008). This drop in opening blogs is of interest against 41% of blogs (14 blogs) surviving beyond 12 months (Table 2). That is, the majority of blogs (59%) are inactive after 12 months.

Table 3: Deleted (Were recorded in March 2007 but did not appear in 8th March 2008)
Key: Numbers represent percentages (in brackets are numbers for clarity)
21 out of 34 (62%) blogs had been deleted

Category		%	Function				Started			Survival in months (inception to last post)				
			Personal	*Student*	*General*	*Not clear*	*2006*	*2007*	*2008*	*Less than 2*	*2-4*	*5-7*	*8-12*	*Greater than 12*
Personal		47(16)	47	-	-	-	03	44	-	41	-	03		03
Administration														
Faculty / School	Edu													
	Arts													
Society / group		15 (5)			12	03		15		09	06			
Total		62 (21)	47		12	03	03	59		50	06	03		03

Table 3 shows that 62% of the blogs had been discontinued by March 2008 (Second sampling), and that the majority of discontinued blogs belonged to those about personal concerns (16/21 = 76%). Note that deleted blogs were rarely active beyond 2 months.

Blogging at UNE competed for staff attention against Wikis and the introduction of Sakai and WebCT, both of which were mandatory for staff to use. Thus, while there was clear and firm guidance to staff to use Sakai, for example, there were no rules or requirements to start blogs. Interested staff had to look for support themselves. Blogs were free for all who were registered at UNE and this seems to have accounted for the large number of personal blogs. Furthermore, having no policy on blogging seems to have encouraged higher incidences of personal blogs, as well as many discontinued ones at UNE, albeit on individual interests.

The UNE blogs lacked rigorous scholarly work (Glenn, 2003) and demonstrated gaps between blogging rhetoric and practice (O'Donnell, 2005). Thus, blogs at UNE proved Downes (2004) fears of bloggers writing trivia. Data supports Downes's observation that boring postings in a blog reduce the lifetime of that blog to less than 12 months. Successful pedagogical blogs seem to require clearly guided objectives (Armstrong, Berry & Lamshed 2007; Bartlett-Bragg, 2003, p. 8; Framer, Yue, & Brooks, 2007, p. 264; Huann, John, & Yuen, 2005).

O'Donnell's (2005, p. 1) as well as Sims' (2006) argument for shifting pedagogical framework to suit a cybercultural practice might be plausible but requires a major paradigm shift. Findings are suggesting that such a shift is necessary since the potentials of ICT are not utilised, but remain rhetorical in literature. The shift requires researching ICT skills and beliefs among staff about how pedagogical ICT could be. However, such research has to involve staff; it has to be action research.

Implications for Professional Development in ICT

Results about the use of ICT indicate a need for continuously revising ICT policies concomitant with the ICT terrain, with equal attention to pedagogical and technical skills. An important consideration is the need for designated time for staff to engage with ICT frequently. This is important in relation to work agreements for both staff and the ICT team. Other imperatives include managing change, staff re-examining their teaching strategies with a view of incorporating ICT in a manner that supports constructivist and active learning, and shifting towards virtual and open spaces of collaboration in which the distinction between lecturer and students is obscure (Shimabukuro, 2005). The changes would be faith leaps for academia since ICT pedagogical use currently lacks concrete evidence of form, structure, and outcomes. Thus, changes require academia to participate in researching technical requirements and ICT-supported pedagogy. That is, PD requires ongoing action research that would be the source of data to inform the university about levels of, and needs for, ICT technical and pedagogical skills among staff, in concert with ICT changes. Additionally, the UNE is obligated to prepare for younger ICT natives that are increasingly becoming reliant on ICT. The short ICT life spans have to be considered too. For example, it might be cost-effective and easier on staff to perfect the use of a selected ICT than to adopt every new ICT on the market.

Framing PD at the School of Education, UNE

Staff PD has to be with respect to the objectives of the School of Education, such as constructivist active learning, a need to reach external students, the status of ICT tools, the level of ICT skills among staff, and how each ICT tool supports pedagogy. Furthermore, because ICT are acquired without evaluation for pedagogical potential, every ICT has to be researched to determine the
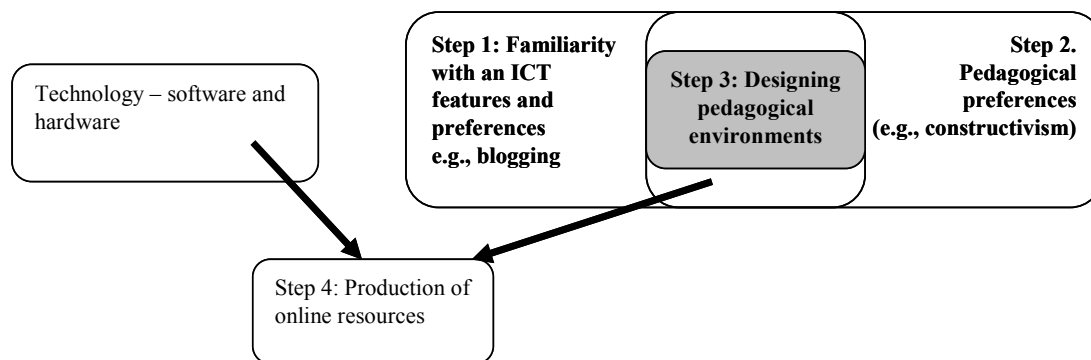

Figure 3.   **ICT development plan for staff**

ways it could support pedagogy. Figure 3 illustrates a model, which is proposed for PD in ICT for the School of Education.

Figure 3 borrows from Davis's model in considering staff familiarity with ICT tools as the first step. It differs from Davis's model in involving staff to identify their pedagogical preferences in relation to ICT features at the time staff is learning about the ICT. A combination of steps 1 and 2 should yield ideas about pedagogy in step three. That is, staff would be able to design pedagogical environments given the ICT features in light of their pedagogical preferences.
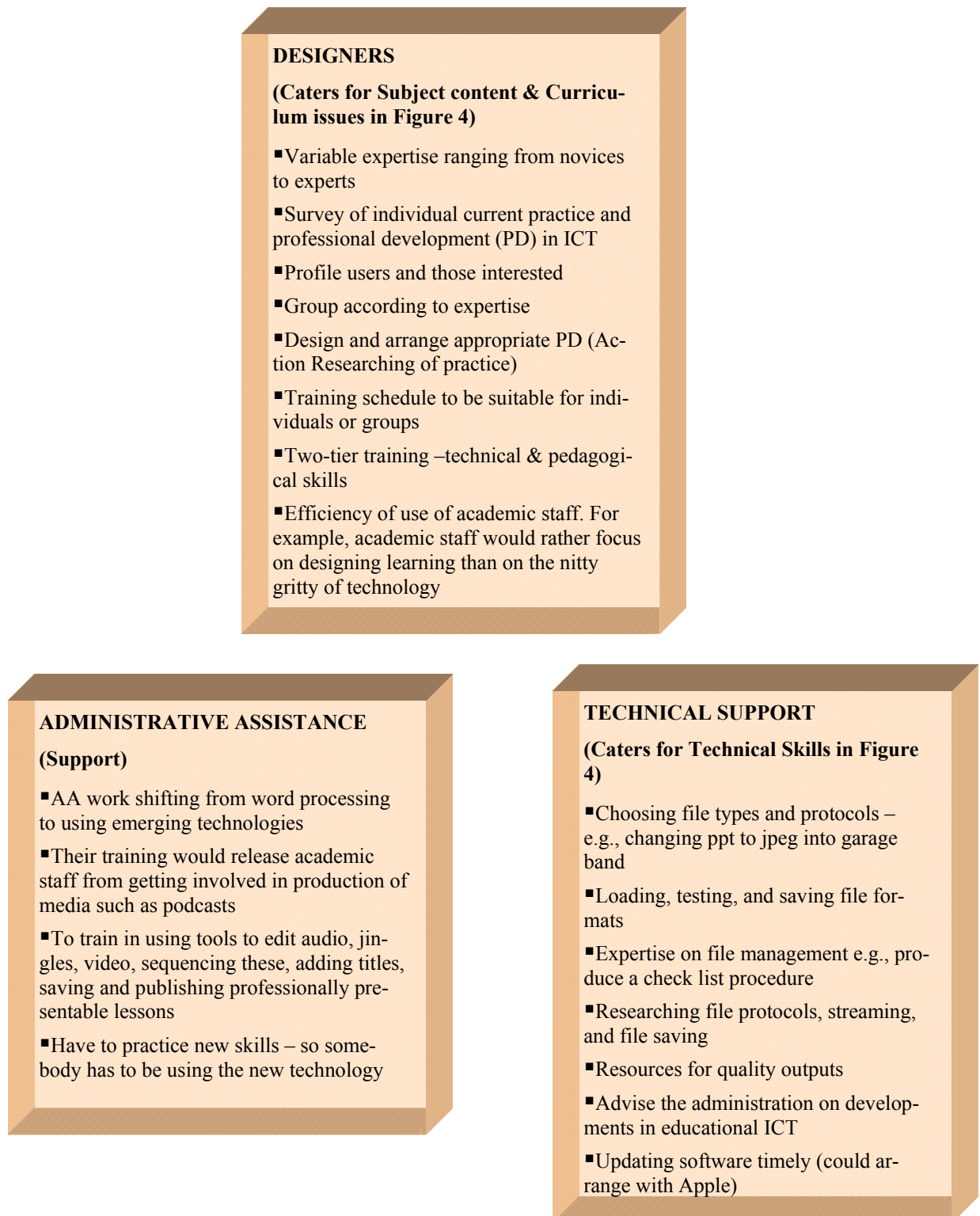
In Figure 4 I have summarised the knowledge and skills that various authors, such as Whittier and Lara (2006, p. 3), Minaidi and Hlapanis (2005, pp. 241- 243), Muwanga-Zake (2007b), and Gredler (2001, p. 537), believe are needed to design an ICT-based lesson. ICT use in pedagogy comprises ICT tools and skills, curriculum considerations, which might differ for each ICT, and the subject matter. Staff are well versed with curriculum issues and the subject matter but are probably challenged when these two aspects are mediated by ICT. It is the ICT mediation where training is required and would be offered by the ICT team.
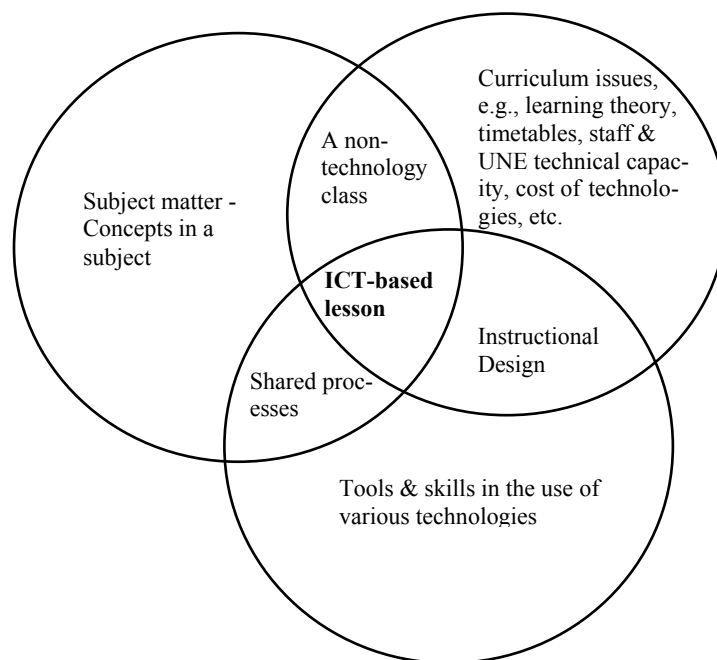
Figure 4: Components of an ICT-supported lesson or material

Figure 5 indicates the possible allocation of responsibilities, which of course have work agreement implications to the extent that these have to be negotiated. Figure 5 shows that PD requires technical and administrative support. The rationale is that a change from a paper-based to online environments would require the Administrative Assistants (AAs) to acquire new skills in organising and publishing online delivery. This requires the AAs to shift their skills from word processing to an integrated word, audio, and video processing. AAs would be responsible for determining user interface and maintaining uniform standards for curriculum designers. Additionally, these are duties that academic staff would rather be spared from, to apply their minds more on research, teaching and planning pedagogy.

Another consideration is sustainability of online lesson deliveries. There is a need for researching quality, economical, and manageable ICT file protocols. Other concerns include helping in choosing the best versions of applications, preparing backups of lessons, archiving, and writing up procedures for preparing online lessons. It is the ICT team that has such skills but requires dedicated time for these duties. The ICT team already does some of this research and support.

DESIGNERS

(Caters for Subject content & Curriculum issues in Figure 4)

- Variable expertise ranging from novices to experts

- Survey of individual current practice and professional development (PD) in ICT

- Profile users and those interested

- Group according to expertise

- Design and arrange appropriate PD (Action Researching of practice)

- Training schedule to be suitable for individuals or groups

- Two-tier training –technical & pedagogical skills

- Efficiency of use of academic staff. For example, academic staff would rather focus on designing learning than on the nitty gritty of technology

ADMINISTRATIVE ASSISTANCE

(Support)

- AA work shifting from word processing to using emerging technologies

- Their training would release academic staff from getting involved in production of media such as podcasts

- To train in using tools to edit audio, jingles, video, sequencing these, adding titles, saving and publishing professionally presentable lessons

- Have to practice new skills – so somebody has to be using the new technology

TECHNICAL SUPPORT

(Caters for Technical Skills in Figure 4)

- Choosing file types and protocols – e.g., changing ppt to jpeg into garage band

- Loading, testing, and saving file formats

- Expertise on file management e.g., produce a check list procedure

- Researching file protocols, streaming, and file saving

- Resources for quality outputs

- Advise the administration on developments in educational ICT

- Updating software timely (could arrange with Apple)

Figure 5: Ideas for Consideration and Discussion with Stakeholders (involve work agreements)

Progress with PD

What has been done during 2008, up to March

With regard to Figure 3, PD is at Step 1 and 2 of podcasting and, to some extent, of blogging for some staff. Real challenges started from working out the level of ICT skills among staff, getting staff interested in ICT, and deciding how each ICT could support particular pedagogical frameworks. Each ICT requires some unique skills. Getting staff interested started by raising awareness and identifying current practices. Other PD activities have included identifying expertise among staff and among the ICT team and determining training requirements as well as technical support being guided by Figures 4 and 5.

In line with what Whitaker and Coste (2002, p. 55) refer to as *targeted IT training*, the PD programme started with the blogging project and a Podcast User Group (PUG). These have been effectively communicated with support from the administration in the School of Education and the Teaching and Learning Centre (TLC) at UNE. The TLC advises and trains staff at the UNE (including the School of Education) in ICT skills and pedagogy. The blogging project has already embarked on advising staff about blogging through a blog named Blogging@UNE (http://blog.une.edu.au/blogs/). Additionally, there are workshops and further surveys planned during 2008.

The choice of podcasting was based on preliminary surveys, which indicated that a number of staff had podcasted their lectures to students, and in fact some lecture sessions were being audio recorded. The additional podcasting advantage was the possibility of recording voices over already existing PowerPoint presentations. The PUG held its first workshop in March 2008 with 16 staff and focused on demystifying the tools (Garage Band and iTunes) that can be used for podcasting. The attendees now have ideas about podcasting, and a follow-up, at an individual level or through workshopping groups with similar levels of podcasting skills, followed during April 2008. The relative success of the podcasting workshop, as compared to blogging, can be laid at the doorstep of the interest in podcasting staff have, partly from experiences of podcasts and probably from other websites. The formation of PUG and the blog project are meant to build learning communities and effective forums to share knowledge and skills, gathering examples of best practice, publishing standardised protocols, and providing stakeholders with comprehensive shared resources.

Action Research

Staff are involved in developing technical and pedagogical skills for two specific ICT; the blogs and podcasts. Later, 3rd year students will take part, not only as a way of improving their own practices but also to inform staff about how these tools support learning and how they look from a student's position. The goal of this research is to develop staff and to provide feedback to UNE that would inform the processes necessary in adopting ICT.

Conclusion

Framing PD in ICT for education lecturers is much more challenging than for lecturers of other disciplines because education lecturers have to use ICT in pedagogically sound ways that are beneficial for the education students. Challenges to PD include limited financial resources to cater for ICT expert personnel and cutting edge ICT. Additionally, the university has to designate time for PD in ICT, especially because ICT is ever changing and at an exponential rate. Above all, staff work agreements now ought to recognise a need for continuous training in ICT. These challenges include identifying ICT for desirable pedagogy, which requires action research.

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Biography

Johnnie Wycliffe Frank Muwanga-Zake. B.Sc. (Hons) (Makerere); B.Ed., M.Sc., M.Ed. (Science Education) (Rhodes); PhD (ICT in Education, Natal); P.G.C.E. (NUL); P.G.D.E (ICT in Ed.) (Rhodes). I am a lecturer at the School of Education, University of New England, Armidale, Australia. I specialise in ICT in education and learning & teaching frameworks. I am coordinator the med (ICT in Education) course and responsible for professional development in ICT for the School of Education. I am also specialised in entomology as well as lecturing and teaching science. **Contact: Email**: jmuwanga@une.edu.au; **Phone**: 02 6773 2495 (or +61 2 6773 2495) **Website:** http://www.une.edu.au/ehps/staff/jmuwanga.php