Networked learning: Implementing a fully flexible, multi-institution network of elearning provision

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The increasing power of networked computing and the next generation Internet, often described as Web 2.0, has enormous potential for institutional collaboration on the development, delivery and sharing of educational resources, courses, faculty and students. Building on a number of TEC funded eLearning developments over the past four years; the Tertiary Accord of New Zealand, (TANZ) took the step of piloting a proof of concept for networking the Moodle instances of the six TANZ member institutions.
The pilot was designed to test the network's ability to enable the sharing of courses, resources, learners and tutors. Moodle is an open source online Learning Management System (LMS), that has had extensive development and wide adoption in New Zealand. This paper examines the experience of this initiative through the lens of a Participatory Action Research project that ran alongside the pilot, the themes that emerged from the research and the guiding principles for future networked provision of eLearning that the project generated.

Introduction

TANZ is a collaborative consortium of 3 North Island and 3 South Island polytechnic / institutes of technology. TANZ's vision is to be a leader in collaborative applied vocational education and training. The guiding, and in fact the operating principle of the Accord is that of active collaboration across a wide range of subject disciplines and policy areas (http://www.tanz.ac.nz/about_us/vision.php). One of the key areas of the Accord's activity is in the design, development, and support for the delivery of eLearning courses.

Beginning in May 2007, TANZ and the Flexible Learning Network (FLN), an eLearning development company in Wellington, worked together to explore the potential of establishing a TANZ eLearning network that could link all six TANZ institutions in a fully flexible networked provision of eLearning delivery. Principle staffers with FLN had been instrumental in developing the networking capabilities of Moodle through a series of eLearning Collaborative Development Fund (eCDF) contracts from TEC.

TANZ itself had also had been awarded several eCDF contracts to develop a range of workplace focused eLearning courses and programmes and had also developed an ad hoc, web-based eLearning support site and community of practice (COP) network that focused on raising eLearning capability and capacity in the TANZ group as rapidly as possible. It was also concerned with monitoring and maintaining the consistency of delivery and quality of eLearning materials, learning activities assessments and best practice in learning facilitation and learner support across all versions of the programme across all TANZ providers.

This combination of FLN's technical developments with the Moodle platform and TANZ's development of the collaborative support network resulted in a TEC funded pilot project designed to achieve a range of goals including:

- Sharing programme/course content, course information and materials, student management data across the 6 TANZ institutions teaching 6 NZ Diploma in Business courses;
- Testing the technology framework that enables learners at one institution to access taught courses, resources and learning materials from partner institutions through a "single sign on" login process, while retaining the home institution's logo and other brand identification;

- Broadening learner access to a wider range of education and training options, than may be obtained locally.
- Evaluating the issues, benefits and possible downsides of this strategy.

Background

The network of provision pilot was designed as a proof of concept in which each of the participating TANZ institutions delivered one of six online versions of the National Diploma in Business year 1 papers that had already been developed by several institutions and these were shared around so that each institution could participate in the online provision and learn from the experience. Learners from each of the six TANZ regions were enrolled in one of these courses. In effect each course instructor was delivering an online course with up to 20 learners all from different regions. All 6 courses were delivered simultaneously and much of the pilot was focused on testing the robustness of the networked technology and learning from the process of managing a complex collaborative project including all the various and numerous administrative and academic coordination issues that were an inevitable part of the pilot.

The Moodle LMS platform was chosen both for its ease of use and the functionality that had been developed by Flexible Networks Ltd. that enabled multiple instances of Moodle installations at different institutions to be networked together thus providing the seamless routing of learners from their own home instance of Moodle to any other institution's Moodle thus potentially providing access to a wide range of courses and resources. In addition, the networking functionality of Moodle also enabled the learner's home institution's branding to follow the learner regardless of from where the learner was accessing their course or resources.

An integral part of the pilot was both an externally commissioned evaluation research project (not released in time for this paper), and a Participatory Action Research (PAR), project. This paper is based on the data generated from the PAR project which was undertaken to investigate and evaluate the impact on learners, teachers, and institutional practices that networking the delivery of such courses involved. This pilot went live in July 2008 and ran till the end of December 2008.

Literature survey

Little research exists on eLearning collaboration between institutions of further or higher education. What research that is available, is generally focused on attempts to create a virtual university entity with a consortium of existing universities to share development and delivery of shared courses between the members of the consortia. Duin and Baer , 2000, Lepori, Rezzonico and Succi, 2003, Pollmann, 2004). Some of the more intractable stumbling blocks with many of these attempts at collaboration in the development of shared eLearning courses resources and delivery is comprehensively pointed out by Georgieva, Todorov and Smrikarov in their 2003 paper "*A Model of a Virtual University – some problems during its development"* in which they point out 13 unresolved, yet mission critical issues including: Accreditation, Copyright Issues, Quality Assurance in Learning, Mechanisms for Student Examination and Evaluation, Pricing, Communications, Administration, Common Credit System and Content of Learning Materials.

There are examples of successful collaborations, such as that represented by the Open University of Australia, but these tend to work as brokering arrangements managed by a centralised clearing house, which handles enrolments on behalf of the institutions and funnels students to specific institutions for their study. Other examples of successful collaboration are generally in things like the joint or collaborative developments of Reusable Learning Objects (RLOs), (Leeder et al, 2004), usually in response to government funding initiatives. While these institutions are happy to participate in setting up project teams, the actual products of these collaborations do not generally impact on the institutions themselves in anything other than a limited and peripheral way; they do not engage the institution at a level or in a manner that is likely to change practice and / or policy.

The TANZ eLearning network pilot was unique in that it built on a number of years of successful collaboration between the member institutions during which time many of the issues, that are often viewed as problematic in terms of collaboration, have been addressed and have either been resolved or mechanisms developed to deal with those issues less readily agreed among the members. This research project was not only designed to identify, understand and resolve the technical issues involved in a network operation, but to also to leverage the collaborative capability that has been already developed

among the TAMZ group. It was also focused on further understanding and resolving the human factors and organisational issues such sophisticated and complex collaborations generate.

Research project objectives

This PAR project was intended to address the following objectives:

- determining what the impacts are of delivering fully networked online/blended courses are on learners; teachers, institutional practices and learning support;
- determining what the technological and administrative constraints and issues are in networked provision delivery;
- determining what the staff professional development needs are in networked provision delivery to assure highest quality teaching and learner support and engagement;
- determining the range of co-teaching and blended delivery options and strategies that can be implemented in a widely distributed network of provision;
- creating and documenting a robust set of principles, recommendations and guidelines for, and emergent grounded theory about networked provision of blended eLearning courses;

Research methodology

The research methodology employed for this pilot project is based on a 3 cycle variant of that proposed by Melrose and Reid (1999), in their "Daisy" Model for Collaborative Action Research. This approach in turn is based on work by McTaggert (1998), Winter (1996) and Zuber-Skerrit (1992). Participatory Action Research was chosen as a method of research because, as in Laurillard's words,

> Innovation in education is time-consuming and difficult to develop effectively. We make progress faster if we learn from each other, and especially if we can transfer the proven pedagogical practice through cross-discipline collaboration. (2008)

It was judged to be the most efficient and efficacious way of capturing the most significant and salient learnings, as close to the action as possible.

The three cycle spiral approach

This PAR project used a three cycle, reiterative and spiral methodology, wherein each cycle re-examined, reflected and built on the experience, data and outcomes generated in the previous cycle.

Figure 1 graphically illustrates this spiral cycle approach. In this case the author has named three cycles spiral "Reconnaissance", "Re-Design" and "Re-evaluation".

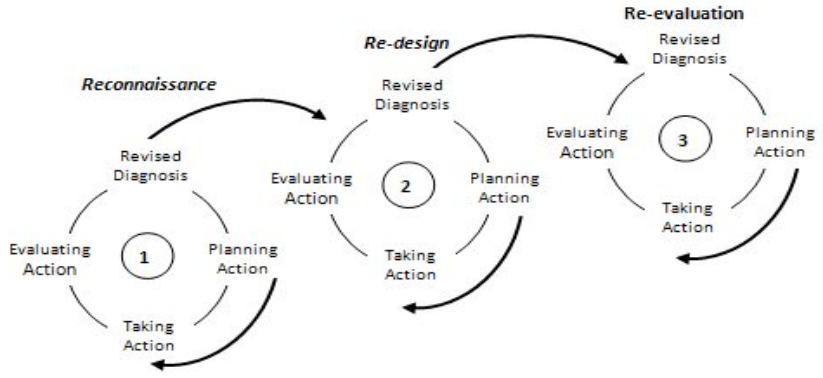

Figure 1: The three cycle spiral
(after diagram from Coghlan & Brannick, 2001.)

Cycle 1: The *Reconnaissance Phase* involved an exploration of the issues generated by the start up phase of the pilot of the online network of provision delivery of the NZ Diploma in Business.

Cycle 2: The *Re-Design Phase* This cycle was focussed on reviewing in depth, the action research methodology employed in the start up phase of the pilot. This involved an examination of the experience of tutors and others closely involved in the pilot in order to address any shortcomings in the research

design model or issues raised as a consequence. In addition it also examined the learners' experience, and reviewed the technical and administrative issues and any course learning design issues generated by the pilot. It was anticipated that this would lead to a re-design of aspects of the delivery model going forward as well as strong recommendations for those aspects of the start up that were peculiar to the start up and did not impact on the balance of the pilot's implementation.

Cycle 3: The *Re-Evaluation Phase* proposed an evaluation of the entire pilot, including the PAR implementation, reflecting on the totality of the experience and the drafting of principles and strong recommendations for future developments.

Daisy model

The "Daisy" model PAR draws its name from the daisy petal like graphic representation that Melrose, M. & Reid, M. (1999) proposed, (an adaptation of which is shown here - see Figure 2), in which small teams of action researchers are engaged in a range of related "mini-projects that contribute to a larger whole.

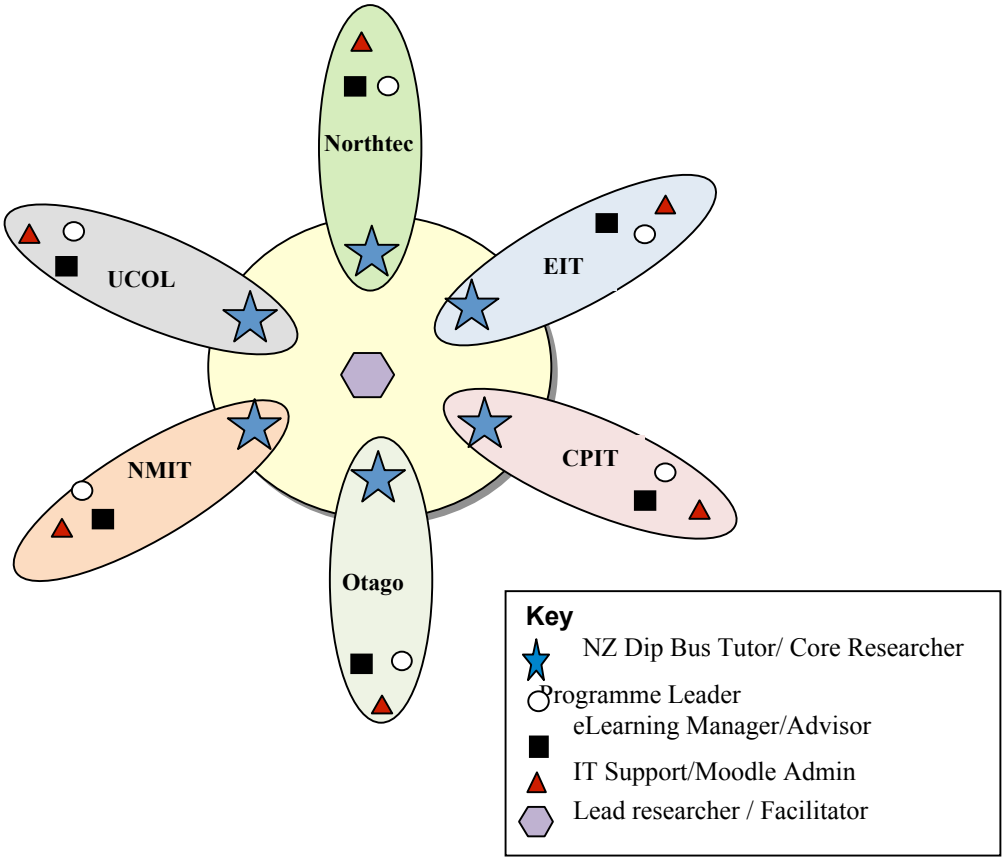

Figure 2: Representation of networked eLearning delivery pilot action research groups

In the original design of the research project each tutor responsible for teaching/facilitation of a NZ Dip Bus paper also had the role of core researcher in a group of the action researchers from across the 6 TANZ institutions. They in turn were to work with a small team of stakeholders in their own institution involved in the blended / online delivery of the course. In general, this team was to include the programme leader; the eLearning advisor and IT support person and other staff members as required. (See Figure 3).

The core researchers from each institution were to form a Community of Practice (COP) under the guidance and support of the research facilitator lead researcher. This group was expected to meet regularly, either face to face or virtually, via internet meeting software to discuss the progress of the pilot, their particular issues, concerns, observation and insights and contribute to the development of guidelines and grounded theory focused on the networked delivery of education and training.

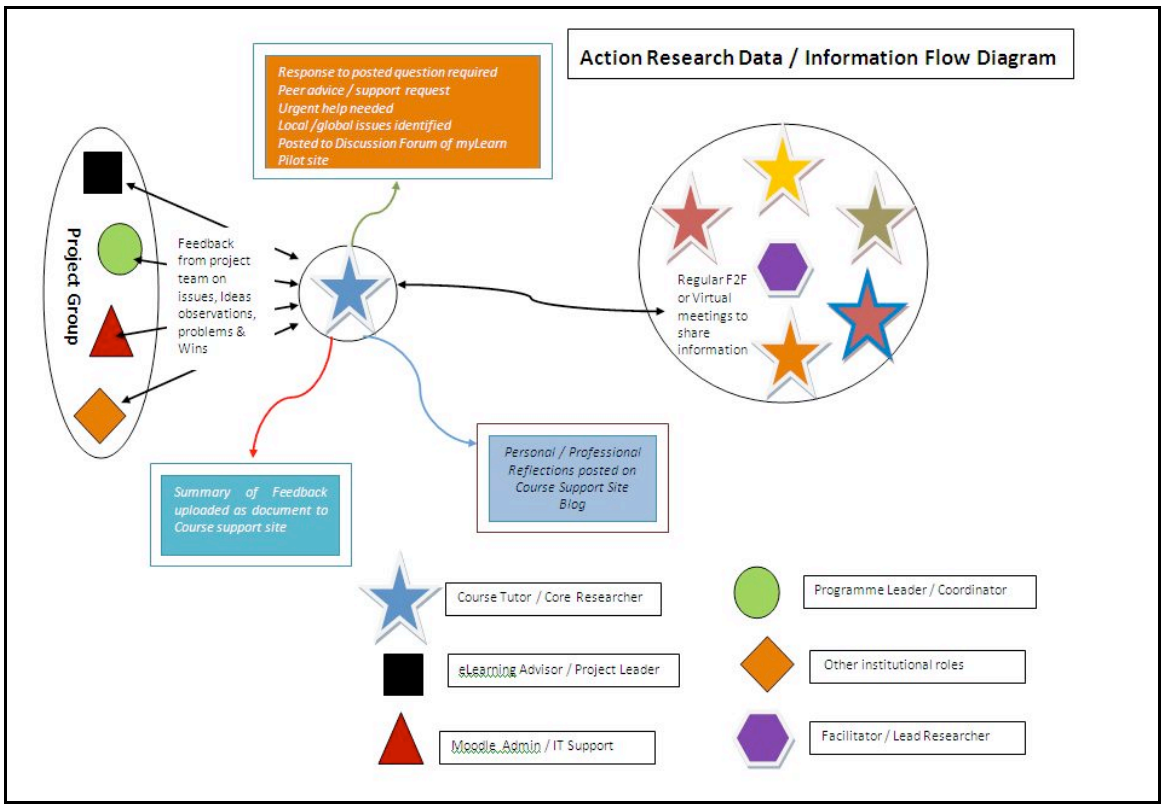

Figure 3: PAR research data /information flow diagram

Data gathering plan

The process of generating feedback, information gathering and data collation was to be supported through a COP site on the TANZ Network Support web site using the communications tools of discussion forums, wikis and document management. Several face to face workshops were also conducted along with regular virtual meetings using Elluminate virtual meeting software, (see Table 1).

Table 1: Action research data / information flow

Activity	Frequency	Content
Reflective Journal Wiki on myLearn NZDIP Bus Action Research site for individual papers	Weekly till 4th week of course then fortnightly thereafter	Personal /Professional reflections on the experience • Observations, insights, questions & realisations • Challenges, rewards, frustrations, successes & disappointments • Actions Taken – consequences / outcomes • Things that worked / things that didn't
Operational issues Summary on myLearn NZDIP Bus Action Research site for individual papers	Fortnightly till 4th week of course then monthly thereafter	Using operational issues template, gathering data / feedback from project team and colleagues from meetings, emails etc. Summarised and uploaded to tutor support site as word file.
Action Research Virtual meeting	Fortnightly till 4th week of course then monthly thereafter	Either phone conference or virtual meeting applications (Elluminate) Catch up and discussion of issues – feedback etc. set time to be agreed
Discussion Forum on myLearn NZDIP Bus Action Research site for individual papers	As required	• Response to posted questions required • Peer advice / support request • Urgent help needed • Local / Global issues identified • Summary of Operational issues from each institution (moderator to collate from individual Tutor Support paper sites)

These core group action researchers were also expected to maintain an ongoing journal of reflection on and description of the pilot project issues, concerns and achievements using a web log (Blog), to record their experience and the insights of their individual teams.

In most cases, learners for the myLearn pilot were specially selected from outside normal enrolment channels and were offered free enrolment by way of scholarship in recognition of their participation in the pilot project and agreeing to participate as research project subjects.

Cycle 1: Reconnaissance and implementation

The first cycle of this research project focused on the start up phase of the pilot, in which involved a wide range of technical and administrative issues.

Project teams

One of the early issues to emerge was the manner in which the project was to be managed at each institution. There were two structural levels for this pilot, the TANZ central project group which established the overall framework and structure for the pilot and the individual institutional project groups. It was left to each institution to manage their end of the project in the way they thought best.

Each institution managed their part of the overall project in a different way. Some took a project team approach and appointed people to particular roles to manage and coordinate different levels of activity. Other institutions took a more hands off approach and left much of the organising to the eLearning Advisor, the Moodle Administrator or the tutor. Others approached this in a method that fell somewhere between the other two poles.

The project team approach provided the benefits of clear and timely communication and a smooth operation. The "hands-off" approach tended to result in an increased workload for the tutor and less effective intra and inter institutional communication and a less organised operational process.

Technical issues

The technological effort in getting all the institutions equipped to enable network access and functionality was considerable, particularly as none of the six TANZ institutions were running the version of Moodle required for the pilot, indeed one institution didn't even have Moodle as an eLearning platform operating at all.

Inevitably there were a few technical issues that emerged in the run up, but once the courses were launched, these were relatively few and only of a minor nature, which given the complexity of the project, was both gratifying and somewhat surprising. The technology, though never before trialled in anger performed far better than expected.

Administration issues

Administratively, enrolling learners from different regions, through different institutions into the various courses also faced some challenges. It was difficult to accurately track the numbers being enrolled from each institution. A Wiki and an online database were established to enable rapid updating of the numbers of students being enrolled by each institution and into which course. Information tracking between the institutions was a major issue, but solutions, developed on the fly, were quickly adopted and to a large extent were resolved, though in some cases not without some angst.

Action research activity

From the course tutor/ facilitator's point of view there were two particularly difficult aspects to their role as core researchers in this pilot. The sheer amount of information they had to manage generated by all the various communications tools used to manage such a large scale project and the fact that only two out of the six initial facilitators had any experience at all as online teachers and this only minimal. This impacted on them in such a way as to render them largely incapable of effectively fulfilling their role as action researchers.

Action research is predicated on the notion of investigation to improve practice and processes related to quality teaching and learning. Having little previous experience with eLearning, struggling to come to grips with both learning how to effectively facilitate eLearning, as well as dealing conceptually with eLearning in a networked environment and managing the extreme levels of information being transmitted especially in the run up to the courses being launched proved to be too much and resulted in a major rethink of how to proceed with the research side of things.

Collaboration

One of the major achievements in this online network of provision was the very high level of collegial cooperation and collaboration across and between teachers, eLearning advisors, Moodle Administrators, IT technicians and other allied staff involved in the pilot. This was demonstrated in a significantly high level of mutual support and exchange of knowledge and sharing of expertise between all participants.

Cycle 2: Reality and redesign

One of the gratifying aspects of the pilot was the fact that once the courses settled into a regular pattern of activity, neither the tutors or the learners appeared to experience anything out of the ordinary for an on line course, given they were all operating in a networked environment. The technology worked as expected and, based on a student "First Impressions" evaluation, learners in particular reported little in the way of unusual or noteworthy effects that were a direct result of being in a network environment. As far as could be ascertained, the network environment added little or no additional impact that otherwise might have been expected in a normal, run of the mill, online course.

However, as the pilot unfolded it became clear that the original conception of how the Participatory Action Research project would operate was inadequate for the scale and scope of the actual pilot project. In the first cycle of the research project the proposed role and functioning of each of the institutional research teams failed to fully eventuate. While plenty of research data was generated through other channels, such as live Virtual Meetings, discussion board activity on the TANZ Network support site and phone conferencing, the intended source and organising principle of the data gathering plan, that of tutors as core researchers did not manifest

The learnings that were generated through the other channels though were enthusiastically shared between the entire network of participants. The reiterative manner in which actions were argued, agreed, then taken; then reviewed, re-considered and then a new intervention made, not only provided a rich source of data in itself, but also, in an ad hoc and unplanned fashion, operated as a de facto example of action research. It could be argued that in order to achieve its goals, the nature and demands of start up phase of the pilot forced the entire enterprise to operate within an action research culture; though not in the way it was originally conceived or planned.

Clearly the PAR design had to be revisited, re-thought and re-aligned with the realities on the ground. The difficulties experienced with the initial PAR design required a fundamental rethink of its methodology. Cycle 2 of the project was an opportunity to evaluate what had been achieved and provided the necessary impetus to evaluate and redesign the research approach and to this end a workshop of all participating tutors and eLearning advisors was convened. This workshop took place several weeks after the courses had started when most of the start up activity had settled down somewhat. Concerns were raised, discussed and a number of new ideas were generated. One major assumption, on which the original design was predicated, was vigorously challenged; that the course tutors were the best placed to act as core researchers.

For a number of reasons, that became obvious in hindsight, it was clear that it was the eLearning advisors who were much better placed as practitioners to lead the research effort. For a start they collectively had far more experience with, knowledge about and a grounded theoretical understanding of eLearning practice and pedagogy. Also, because of the nature of their role, they were linked into a much broader network of administrative, academic, managerial and technical staff across their institution, than their teaching colleagues. Consequently, they had a significantly better understanding of the institutional communication nodes and pathways, the broader operational and organisational structures and choke points which allowed them to operate across institutional fault lines and circumvent inevitable corporate barriers. In addition they collectively had a fundamental grasp of the conceptual detail of the pilot's network framework, the future possibilities it offered and the communication and operational needs and requirements.

Rethinking the research design

The original action research design was evidently based on some incorrect assumptions, and it was probably also over ambitious given the complexity of the project. The demands made on those involved and the operational realities of six institutions collaborating to deliver six different papers, one from each institution and, in turn, managing learners from those six different institutions, were sufficient to render the original Participatory Action Research project design less than optimal.

Another difficulty was the relative inexperience of the online tutors involved in the project. This not only resulted in the heavy workload mentioned above, but also provided little in the way of relevant experience on which to draw and on which to reflect. This also had an inhibiting effect on committing thoughts and feelings to a record that could be viewed by others. The lack of thinking space, time and some conceptual model of what "reflecting on practice" actually means; and little previous experience with action research – further inhibited any attempt to set up and record reflections in an electronic journal.

Some tutors attempted to set up and record reflections on practice and the detailing of issues and events, but none of these attempts lasted for more than a couple of weeks. There was however a considerable number of contributions to the discussion forums set up on the project support site. This generated a lot of data about the issues and difficulties. In addition the regular virtual meetings, using interactive synchronous virtual meeting software such as Elluminate, provided opportunities for the active participation of tutors and eLearning Advisors. This also generated data on the significant issues and events of the pilot.

What was lacking however, were the individual reflections on the experience of the pilot, especially those of the online tutors. This then was the impetus to use a more pro-active approach by conducting phone interviews with each of the key pilot project participants.

Given the erroneous assumption that the course tutors / facilitators could also take on the role of core researchers and journal their reflections on their eLearning practice experiences, it was considered appropriate to gather the necessary data through a recorded phone interview process. This approach was one of the ideas generated from the workshop following discussion with the research supervisor as to its validity and agreed to by all participants.

The phone interview process was seen as a realistic alternative to the original notion of individual reflective journals authored by the core researchers with input from others in their PAR team. In fact, the phone interview process which used a guiding set of questions produced as deep a level of reflection and insight as could be expected in the original design, perhaps even deeper. One main advantage of this approach meant that the questions used provided a quite tightly focused set of responses which made it easier to extract themes and similarities of experience. These were used to compare and contrast in the data analysis phase of the research. These insights and reflections on experience provided excellent macro level data about structures and organisational relationships that might not have been unearthed in purely personal reflections.

Cycle 3: Re-evaluation

One important lesson learned from this PAR project is that far more time and support for scaffolding and discussion is needed in order that participants can practice individual reflection, than was allowed for in the original research methodology design. Only in this way can a culture and climate be created in which Action Research is seen as an important activity for front line educators. The tight constraints of availability, time and workload compromised the original research design concept and rendered it unworkable. However the research objectives were met through a timely shift in focus and methodology brought about by the collective experiences and insights of the participants in response to the realities of the situation.

Interview process

The questions for the recorded phone interviews were developed in consultation with several experienced researchers. The questions sought to gather personal reflections and insights into the experience of participating in the pilot project and to highlight issues, successes and challenges that were encountered. The purpose of these questions was to guide the progress of semi-structured interviews, rather than to be a rigid structure to be strictly adhered to. Copies of the questions used in the interviews are given in the Appendix to this report.

The six tutors and seven eLearning Advisors, who were directly involved in the pilot, along with the TANZ eLearning content developer, (who had overall Moodle LMS administrative and support responsibilities for the pilot), were interviewed. Each person was phoned at a pre-arranged time and the interviews were recorded directly to computer using a modified phone and Audacity audio editing software. Each interviewee was provided with a copy of the questions to be covered prior to the interview and was informed that the interview would be recorded and the outputs from the interviews would form part of the project's final report. The interviews were then transcribed into individual word documents,

one for each interviewee and selected comments were then compiled into a structured document that itemised the major themes that emerged from the interviews.

Themes

Nine themes were generated from the interview process:

1. *Overall impression of the online network of provision pilot.*
   The universal view of those interviewed was that it was a very successful project that engendered great enthusiasm for the possibilities and potential of this type of network, notwithstanding the problems, workload, frustrations and the complex issues involved.
2. *Project sponsorship, communications, organisation and change management*
   A key to successful inter-institutional and intra-institutional collaboration is the championing of the project within an institution at a sufficiently senior management level, so that adequate resources can be ensured and inter-departmental communication, conflicts and issues can be appropriately managed.
3. *Project and team management*
   One of the main themes to emerge from this interview process was the manner in which the project was managed at each institution. While the TANZ project team established the overall framework and structure, it was left to each institution to manage their end of the project in the way they thought best. Each institution managed this project in a different way. Some took a project team approach and appointed people to particular roles to manage and coordinate different levels of activity. Other institutions took a more "hands off" approach and left much of the organising to the eLearning Advisor or the Moodle Administrator. Others approached this in a way that fell somewhere between the other two poles.
4. *Professional Development (PD)*
   The critical need for online tutors to access appropriate PD in a timely manner prior to teaching in a networked online course was a major theme to emerge from the interviews. This fell into two broad streams, training in Moodle, the online delivery platform and experience in online facilitation.
5. *Workload*
   The issue of the heavy workload generated by the pilot, and experienced especially by the tutors teaching online for the first time, was commented on by virtually all the participants in the interview process. In particular the issue of a general lack of support, and in some cases a lack of a functioning project team from which support could be expected, was of significant concern.
6. *Technical and administrative support*
   The theme of support was also a significant concern for the interviewees and was focused on two sub-themes, Moodle technical and operational support and administrative/project support. While technical support was an obvious and well recognised need, the high level of administrative and project support required was, in general, not well anticipated or addressed.
7. *Project resourcing*
   The theme of project resourcing is one that emerged quite forcefully from the interviews, with a general consensus that resourcing was, for the most part, inadequate and resulted in unreasonable levels of workload, stress and, in some cases, poor student support.
8. *Differences in institutional academic, administrative and technical processes*
   This theme was one that brought home to the key project participants the very real differences that the TANZ institutions have in terms of their institutional, academic, administrative and technical structures and processes. These differences account for some of the complexities encountered in this pilot especially around communications and information sharing and exchange.
9. *Collaboration*
   One of the main reasons cited by the respondents for the success of the pilot was the high level of collaboration, inter-institutional cooperation and support that was a significant feature of this pilot.

Key principles

Highlighted here are the key principles that have been developed as a result of completing the eLearning network of provision pilot. These form the basis of a set of guidelines and recommendations that have been developed as an outcome of the completed pilot project.

Principle 1: Project championship

A key to successful inter institutional and intra-institutional collaboration in eLearning network of provision project is the championing of the project at a sufficiently senior level within the institution's management structure. This ensures that adequate resources can be made available and that inter-institutional and internal communication, conflicts and issues can be appropriately managed.

Principle 2: Project management

The complex demands of an eLearning network of provision collaboration are such that a project management and project team approach by each of the participants is required in order to manage the technical, academic, administrative, internal and external communications, learning support and teaching tasks involved.

Principle 3: Professional development

Tutors expected to teach in an eLearning network of provision environment should have prior eLearning facilitation experience and familiarity with the delivery platform. The added complexity of the networked environment makes it unrealistic to assign teachers inexperienced in eLearning delivery without providing ready access to appropriate eLearning professional development and training in the use of the delivery platform and adequate and appropriate support during course delivery.

Principle 4: Tutor workload

Adequate allowance should be made for online teaching hours that realistically take into account the online teaching experience of tutor and the added complexity and additional administrative course workload that the eLearning network of provision entails.

Principle 5: Support

The additional complexity and high levels of intra and inter-institutional communications, the administrative workload and technical support required in an eLearning network of provision should be acknowledged and accepted by senior management and appropriate and adequate levels of support be provided .

Principle 6: Project resourcing

An eLearning network of provision initiative requires a higher level of resourcing than that usually required for non-networked modes of online delivery, particularly in the set up phase of the collaboration, and as such should be planned for and appropriately and adequately resourced.

Principle 7: Differences in institutional processes and structures

Different institutions involved in a network of provision of eLearning courses will have different administrative, academic and technical structures, processes and roles. These must be recognised, accepted and ways found to accommodate these realities and mitigate the potential problems they may generate.

Principle 8: Collaboration

Collaboration cannot be mandated. It must arise out of a history of consistent behaviour, integrity, trust, a willingness to listen, a commitment to share experience and knowledge and an ability to put aside tendencies for patch protection and exclusivity of ownership.

Conclusion

One of the most satisfactory outcomes from the project was the high degree of inter-institution collaboration and the high level of knowledge sharing, group learning and institutional capability building that occurred. This collaboration included a range of groups including IT, Moodle Administrators, eLearning Advisors, library and learning support services and those who had the role of First Point of Contact at each institution. By and large the tutors were too busy dealing with their own course management and teaching responsibilities to engage in much of the inter-institution sharing of knowledge, skills and information, but their participation in the workshops did, to some extent, provide opportunities to share experiences.

So successful has been the inter-institutional collaboration that various groups such as the eLearning Advisors and Moodle Administrators are continuing to collaborate on a range of initiatives to produce shared resources that each institution would otherwise have to develop on their own. The pilot

demonstrated the very real value of inter institution collaboration and this, if nothing else, is a major benefit to accrue from the project.

Ironically, and rather surprisingly the inter-institutional collaboration and cooperation was in some cases more effective than that experienced between various sections and departments within institutions.

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