

Making a "Net" for the Net

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INTRODUCTION Traditionally New Zealand pre-service teacher education was provided by up to seven teachers' colleges, which provided pre-service programmes mainly for school leavers. Recent changes to accreditation processes and approval of tertiary programmes have resulted in about 32 private and public providers offering teacher education.

There have also been changes in the way pre-service teacher education is made available to students. Whereas it was previously expected that students would study in face to face classes, students are now able to engage in teacher education in more flexible and open ways. The University of Waikato is one provider of open and flexible learning and teaching opportunities. This paper examines the way in which the use of new technology has enabled this innovative approach to teacher education over the past four years. Information and communication technology has been coupled with block face to face teaching in a programme that is available to students who live in remote areas and who are unable to attend regular classes on the campus. The paper also examines the way in which the students are supported, in particular the support mechanisms provided by the university and the ways in which

students developed support mechanisms of their own.

BACKGROUND In 1997 the University of Waikato began teaching the Mixed Media Programme (MMP) of primary teacher education designed for students who live in more remote areas of the region served by the university. This was in response to a continuing shortage of teachers for a significant number of schools, in mainly rural areas. Thus, the approach has been to recruit and select students, who, when qualified, would probably live and work in their home districts. It was expected that this would provide teachers with a strong commitment to their own communities, an assumption based on previous experience of teaching other students in some of these districts in the early 1990s, many of whom have continued to teach in their home area.

Formerly, most teacher education programmes relied on face to face contact between university staff and student teachers on a regular basis. The demands on staff in terms of travel and time made this an unattractive and expensive option for a new programme in distant locations, especially in the light of reduced government funding. The decision was made to use information technology to reduce the need to travel.

Computer communication would be the main means of interaction. In the initial stages telephone conferences were used, but their use diminished, mainly because of the high cost. Personal computers, fax machines, telephones and the Internet have been the main means of interaction. Email is used for contact on an individual basis and for the submission of some assignments. "TopClass", a web-based interface developed in Ireland, provides access to coursework, discussion forums and library databases. This "low" technology approach to a teacher education programme has resulted in successful interaction to date and meets the needs of students in remote districts where poorer quality telephone line transmission limits the use of more sophisticated online technology.

The programme that was developed is a "mixed media" approach, an uncommon model amongst a number of other open and flexible learning programmes. Rumble (1997, p. 107) refers to the range of communication technologies used by teachers and students to interact with each other. From that list, the programme offered by the University of Waikato makes use of:

- Face to face interaction during on-campus periods;
- Individual telephone contact;
- Audio-conferences with small groups;
- Asynchronous computer interaction and collaboration; and
- Electronic mail.

To participate in the Mixed Media Programme students are required to attend three "block courses" on-campus each year; work approximately one day each week in a local primary school and use information technology

to interact with course material, staff and colleagues.

This programme has shown many indicators of success so far. The initial group of 54 students began in February 1997. Fifty-two successfully completed the first year of the programme and 48 completed the programme in 1999. The profile of this student group is:

- All except one are women in the range 25-45;
- Most have family responsibilities such as child rearing, which mean they cannot leave their home areas;
- Seven have had previous experience of tertiary study with three being university graduates;
- Most have limited study experience including secondary schooling; and
- Many of the students are active in their local school and wider communities.

Many students have achieved high grades and 48 have graduated from the programme, a very high retention rate. They have readily adapted to using new technologies. The reason for their success appears to be a combination of factors including:

- A relatively high level of motivation within the group selected for the programme;
- Student support from their colleagues and those teaching in the programme;
- The ability to manage time effectively and efficiently; and
- The ability to overcome barriers to the confident utilisation of technologies.

STUDENT SUPPORT In any programme that involves an approach

that new students have not experienced there is a threat of failure and student dissatisfaction (Carrier & Schofield, 1991; Sewart, 1993). The utilisation of information and communication technology was new to most students. So the programme was developed in a way which considered the resources available to the students and used a range of approaches, aspects considered essential by Dillon, Gunawardena and Parker (1992). Built into these approaches was support of various kinds. The approaches and support strategies were:

- On campus block courses;
- Appropriate choice of courses;
- Information Technology support;
- Development of online coursework and the virtual classroom;
- Library support and coaching;
- Administrative support;
- Staff support;
- Local study groups;
- Support from base schools.

On Campus Block Courses

The initial form of contact is through the provision of on campus block courses. Although there is a significant financial commitment required in travelling to and being accommodated on campus, the face-to-face contact has been able to ensure that each group of students had the opportunity to begin the course in a positive way. Each time the students come to the campus they are able to renew contact with teaching staff and fellow students. This appears to provide a sound basis for the online interaction that occurs later in the course. Most of the Mixed Media student teachers respond well to the on campus courses although some initially feel great apprehension. In addition the time away from families does place some pressure on students as they wrestle with issues of

childcare and just being away from home, some for the first time.

A second aspect that was largely unplanned, is the way in which the marae has become central to the success of many student teachers. They describe this as a "second home". For many of the student teachers it was their first point of contact with the university and throughout their course of study they return again and again to this safe haven where friendship and support from their fellow student teachers is always at hand.

Appropriate Choice of Courses

The inclusion of appropriate papers was a significant support approach. When the Mixed Media Programme commenced an initial decision was made to ensure that most students were enrolled in two courses designed to help student teachers bridge into university study and to use information technology. Most of the student teachers came to the teacher education programme with a limited school background and a long period away from study. So a paper which helped them to develop their writing skills was included. The majority of student teachers found this a challenging course but believe that it was important for their approach to further study, a view that corresponds with that of staff responsible for the programme.

A second course that was required of all student teachers was one that focussed on their use of the computer and the way in which it could be used in classrooms. Again most student teachers found this course beneficial, although the continuing need for the course for all students could be challenged because more student teachers are commencing study with greater computer literacy.

Information Technology Support

When the programme commenced the level of technology competency and confidence in the student cohort was low. Many student teachers had no prior contact with technology and some had no idea where to begin. Their only computer access was from their local base schools and prior to the on campus block course they had received no training or familiarisation. Very quickly they recognised the challenge ahead of them and responded by supporting each other as they began to become confident and competent using the hardware and software. They readily accepted the support of their colleagues and from introductory classes about using the online media provided by the university. This support was provided only in the first year and student teachers were subsequently expected to have at least a working knowledge of their own computer on entry to the programme. A CD-ROM was produced which was supplied to each student teacher when they entered the programme. Initial reaction to this suggested that it was an effective tool for them to experience an online learning environment before they start and without incurring any costs.

Student teachers in the Mixed Media Programme are required to become familiar with and utilise a range of information and communication technologies (ICT). As using a computer is fundamental to participation in the programme, a 100 level optional ICT paper was strongly recommended. This action has ensured that students rapidly develop a sense of confidence and competence while using a range of technologies as part of the coursework in an authentic and meaningful context.

Resources to support the online students have been well received by both staff and students who utilised them to become familiar with the online environment in the privacy of their own workspace. A wide range of media in paper, audio, video and CD-ROM formats have helped student teachers explore and experience the online learning environment before they begin to work online. Staff who are familiar with the content of the support resources can refer students to particular parts when technical difficulties arise. This has left the staff time to focus on the content of their course and not on the technology which class members are utilising.

Development of Online Coursework and the Virtual Classroom

One of the critical factors in the success of the MMP, an online teacher education programme, has been the emphasis on teaching and learning, not on the technologies. Avoidance of employing instructional designers has meant control and responsibility for online teaching are placed in the hands of academic staff. This has been critical to the feelings of satisfaction and success enjoyed by both the teaching staff and students. This "low tech" teacher-driven approach at the University of Waikato is fundamental to destroying the myth that online learning and the Mixed Media Programme is a computing activity. Structuring the coursework and teaching interaction so that they are motivating and exciting has enabled staff to concentrate on what they are teaching, not the tools they are using to facilitate this process. Students who are excited about the community they become part of online are able to see past the basic skill requirements and focus on authentic learning experiences that relate to the course(s).

The teaching staff plan and develop their new online classroom environments, which are flexible and collaborative communities. Staff work with more experienced colleagues who understand first hand the challenges and anxieties of teaching online. This collegial security and safety "net" for staff has encouraged a strong focus on new avenues for research and enhanced the practice of teaching online.

The online environments utilised by the School of Education have undergone rapid development in the past four years. The option to stay with an asynchronous mode of teaching to enable students to work at any time of the day or night has been maintained. The need for bigger and better hardware often utilised by new interactive software, particularly the synchronous online technologies, has been avoided so that students with basic hardware systems will not suddenly find themselves unable to continue with their existing equipment. The interactive software utilised in the online teaching activity not only makes class discussion and sharing possible, it can also provide students with an avenue for requests for help and for sharing strategies for success when working online. By carefully considering how the online virtual classroom is set up, each staff member can build in some self-supporting structures which provide a safety "net" for students who are unsure about what to do.

Library Support and Coaching

One of the early obstacles that had to be overcome was the way in which library materials would be made available. In an institution where the focus had been on traditional face to face delivery of courses there was some consternation about providing library materials to students

who were invisible and who did not come and make their own selections of materials.

As is the case with the initiation of most open and flexible learning programmes, it took the work of an enthusiast to devise and implement an approach that would work. With strong support from the leaders in the library, a staff member was appointed as the contact person for students, and she meets with them when they are on-campus. This person has been the reference point for all students as they access their library materials. Requests are made via email and materials are sent and returned using "snail mail". Students have complimented the service provided by the library person as a significant factor in supporting their learning.

Library staff are now working online in some classes as information coaches and see themselves in a very new and exciting role. Aspects of information literacy are integrated into many of the courses and the coaches are able to participate in the online class environment by participating in discussion and responding to questions about how to formulate information inquiries.

Administrative Support

Early in the implementation of this programme, it became apparent that there was a need to provide administrative support to assist the coordination of the Mixed Media Programme. Tasks of the administrator have varied from dealing with programme issues to providing strong pastoral support. The Mixed Media administrator has become pivotal in the coordination of the various aspects of the programme. She is available when needed by both students and teaching

staff. The need for pastoral support is constant and involves the areas of "births, deaths and marriages" and all that comes in between. The wisdom of the administration of the institution in ensuring that the funding of this position was possible cannot be underestimated and the appointment has been a significant feature in the success of the programme for both teaching staff and students. However, the skill of the administrator has meant that students have almost become too dependent on her. The intention was to provide support from a central point and that has been achieved, but at the cost of student support being very time consuming for the administrator. While that support is very important and will continue there remains the question of achieving a balance between support and dependence. To achieve the balance student teachers will need to be "trained" about expectations that are reasonable.

Staff Support

The students in the mixed media programme have frequently commented on the speed and nature of responses from many of the university teaching staff. The contacts made when meeting staff and fellow students on a face to face basis made it easier for mutual-support to occur. Students have responded positively to the ready responses provided by the teaching staff through email and the telephone. An example of their views is:

We appreciate the approachable manner of all the tutors. They let you ring them when there are problems, etc. I am right into the new technology of email etc., but I still like to hear a voice and connect sound with a face. So, I ring all my tutors when I have problems so I can

still have that human contact. This support has been invaluable to me.

The majority of teaching staff describe how they enjoy their online teaching and a number have shared how they believe they know their online students better than many on-campus students.

Local Study Groups

When the programme was established it was decided not to formally organise study groups in local areas. The reason for this was to get students to establish their own groups, which might result in stronger commitment to a group. It was felt that the students needed to be comfortable with the other students that they worked with and not be pressured into groups where they were incompatible with each other. That decision has proven to be sound and many students have gained benefit from the support of their fellow students.

The establishment of "study groups" by the student teachers themselves has been important. A majority of student teachers meet with other student teachers who live close to each other or who are within a local calling telephone area. In many cases they did not know each other prior to joining the programme but have become close friends as student teachers in the programme. They have worked closely together and the student teachers who had previous university experience often were good role models. The impact of role models seemed to be important. The student teachers commented that without each other they may not have remained in the programme, a matter typified by this comment:

We have a very supportive study group structure. We help each other and share problems and ways to

tackle different papers. We share resources and readily help each other. Without this study group, I do not think that I would have been able to cope.

While there were these benefits from local study groups, some of the staff involved in teaching in the programme became aware that a side effect was created through high expectations within study groups. These expectations were created by the influence of high achieving student teachers and the student teachers' own expectations of themselves, often due to the pressure to succeed. Once they had some success in study such as a good grade, they were eager to repeat it or even improve. The result was sometimes increased pressure on family life perhaps because of the increasing time spent on study. Ironically, a major support was also a very real pressure for many students.

Support from Base Schools

One of the elements required by the Mixed Media Programme is for students to work in a "base school" on one day each week to complete specified tasks related to many of their courses. The choice of base school is influenced mainly by where the students live and in most cases there is an existing relationship between a student teacher and a base school. Frequently, students are based in schools where the principal and staff are strong supporters of the Mixed Media Programme. Many of the schools saw themselves as partners in the teacher education of members of their own community. The schools were well aware of the advantage of having teachers who would possibly teach there once they graduated.

The school-university partnership created in this way has generally been beneficial to both parties, with schools regularly interacting with students on a much wider basis than just enabling them to complete their required tasks. Friendships, which were in place prior to the commencement of the student teacher's programme, have become even stronger and others, which initially may have been tentative, have been enhanced. The schools see their support as an important investment for both the student teachers and themselves. The two-way process also facilitates some professional development for teachers and principals as well as collegial support, advice and guidance for the student. The nature of support provided in this way has been significant to the extent that some schools have become so involved that they appear "protective" in their support of the Mixed Media student teachers. This may be just as much a disadvantage as it is a benefit, even though it is well intentioned.

CONCLUSIONS The Mixed Media Programme available from the University of Waikato has used new information and communication technology to enhance teacher education. It has been successful when measured by a number of criteria: academic results, retention rate and student teacher satisfaction, and (more recently) employment of graduates. The current success of this programme, which has elements of traditional approaches combined with open and flexible learning has been markedly influenced by the support structures which have been implemented and which continue to evolve.

The lessons we have learned from this programme have been varied. They include the need to establish key support

structures that support the use of information technology and relate to pastoral care. We have found that our use of a single administrative support person has been a key element in ensuring that students remain in the programme. We have also found that local study groups established by the students themselves are more enduring than any arrangements which might be imposed. The way in which local schools are involved in a partnership arrangement has provided a setting with benefits to student teachers, who are able to develop their teaching skills, and teachers, who get professional development from course materials shared with student teachers.

As would be expected there is a variation in the amount of support that particular student teachers need, ranging from some who are initially, at least over dependent to those who are already seasoned independent learners. It will be necessary to maintain the support structures already established and to continue to monitor the needs of students as they participate in this Mixed Media Programme through a comprehensive research programme.

As the Mixed Media Programme has progressed the use of information technology has become increasingly invisible. The emphasis on people as teachers and learners has become the focus of a supportive community and institution. As the programme has developed over its first three years, efforts have been made to identify student teacher and teaching staff needs. The development of a support network, as discussed in this paper, has assisted teaching staff to focus on the teaching-learning process using within-reach technology. There is evidence that the

forms of support we have outlined have enhanced the student teachers' success, but there is a need for on-going investigation of what is required.

REFERENCES

- CARRIER, G., & SCHOFIELD, M. (1991). Student support and computer mediated communication in distance education. *Canadian Journal of Educational Communication*, 20(1), 45-54.
- DILLON, C. L., GUNAWARDENA, C. N., & PARKER, R. (1992). Learner support in distance education: An evaluation of a statewide telecommunications system. *International Journal of Instructional Media*, 19(4).
- RUMBLE, G. (1997). *The costs and economics of open and distance learning*. London: Kogan Page.
- SEWART, D. (1993). Student support systems in distance education. *Open Learning*, 8(3), 3-12.

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