

The Pennsylvania State University

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**DISTANCE DELIVERY OF PRE-SERVICE TEACHER EDUCATION:  
LESSONS FOR GOOD PRACTICE FROM TWENTY-ONE  
INTERNATIONAL PROGRAMS**

A Thesis in

Adult Education

by

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## ABSTRACT

This appears to be a significant time in distance delivered teacher education with a growing number of distance delivered pre-service teacher education programs appearing around the world. There has been little research or evaluative work that has informed this development. The purpose of this study was twofold. First, it aimed to identify the design, delivery, and management issues and challenges that arise in the distance delivery of pre-service teacher education programs. Second, it sought to identify good practice used in meeting these issues and challenges. Identifying good practice was achieved through the use of the emerging qualitative methodology of meta-analysis which guided increasing complex levels of analysis. Programs of distance delivered pre-service teacher education gathered from available literature on distance delivered pre-service teacher education were systematically catalogued and analyzed. A conceptual framework for this work was developed from consideration of the teacher education and distance education literature and the small body of literature relating to distance delivered pre-service teacher education. The findings were presented using the three fields of literature from the conceptual framework as a structure to identify points of convergence and limitations. It was found that understanding of distance education was strong among the programs of distance delivered pre-service teacher education studied. Understanding of teacher education was weaker and the intersection of practice that distance delivered pre-service teacher education should represent was weak. It was concluded that success in distance delivered pre-service teacher education would seem to come from

resolving the very particular issues and challenges that arise at the intersection of distance education and teacher education. Suggestions for good practice are presented and a number of recommendations for further research and development are made. The study concludes with comment on the increasing use of information and communication technologies such as the Internet and the World Wide Web which seem to provide enhancement to print and other delivery technologies and appear to be allowing innovations in delivery that support the core pre-service teacher education elements of dialog and reflection.

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## Chapter One

### INTRODUCTION

#### Introduction to the Study

This chapter introduces a study that sought to discern lessons of good practice in distance delivered pre-service teacher education where distance delivered was taken to mean program delivery where there is spatial separation of students and faculty. The understanding of good practice was developed through an analysis of programs of distance delivered pre-service elementary (primary) level teacher education programs reported in the literature. The analysis was undertaken through the lens of a conceptual framework which was provided by a review of literature concerning the areas of pre-service teacher education and distance education, and the general, but relatively small body of literature providing general consideration of distance delivered pre-service teacher education but not specific programs.

Delivery of elementary (primary) level pre-service teacher education (hereinafter referred to as pre-service teacher education), the initial training for teachers, is changing in response to a variety of forces both internal and external to institutions. These forces, elaborated on in the next chapter, include: moves towards greater professionalism; demands for standards-based competencies; changes in demographics; more diversity in society; and increasing use of new information and communication technologies. The complex interaction of these forces is having a major impact on the design, delivery, and management of pre-service teacher

education programs and one outcome is a growth in the number of distance delivered pre-service teacher education programs.

This study identified two sets of core elements that seemed necessary to be considered in the design, delivery, and management of distance delivered pre-service teacher education: (a) core elements related to pre-service teacher education programs, and (b) core elements related to the distance delivery of an education program. Identification of the former set involves an understanding and analysis of pre-service teacher education literature. Identification of the latter set focuses on the systemic nature of distance delivery. These two sets of factors provided the conceptual framework that was used to facilitate identification of issues and challenges in the design, delivery, and management of programs of pre-service teacher education. The development of the conceptual framework was also informed by consideration of the small body of general literature related to distance delivered pre-service teacher education.

Reports on programs of distance delivered pre-service teacher education found in the literature provided the data for this study. The programs were analyzed to identify how ensuring the inclusion of the core elements of pre-service teacher education and distance delivery, presented issues and challenges in design, delivery, and management of the programs. From consideration of the aggregated, documented responses to these issues and challenges, the researcher discerned essentials of good practice with the intention that good practice may then be used to guide developers of future programs of distance delivered pre-service teacher education.

## Background to the Study

The purpose of this section is to provide a brief overview of the context that surrounds distance delivered pre-service teacher education in order to provide a general understanding of why this phenomenon deserved further study. The points raised in this section are further commented on in Chapter 2.

Distance delivery is not a new phenomenon in pre-service teacher education (Perraton, 1997; Perraton & Potashnik, 1997). It has been employed in this area of education for more than thirty years (Perraton, 2000a; The Commonwealth of Learning, 2000). There is now a growing number of distance delivered pre-service teacher education programs appearing around the world (Nielsen, 1997; Robinson, 1997). With regard to this change Moon (1996, p.98) has suggested that this is a significant time in open and distance delivered teacher education when he says “There are imaginative and exciting possibilities for the development of teacher education.”

Increasing use of information and communication technologies such as the Internet and the World Wide Web are external forces that provide enhancement to print and other delivery technologies and allow innovations in delivery (Eastmond, 1995; Harasim, 1989). However, most importantly, it seems they provide the opportunity to promote interaction and collaboration (Cahoon, 1998; Eastmond, 1998). “Changing technologies are creating a new generation of [teacher education] programmes, characterized by the fusing of the one-way/two-way dimensions of communication with forms of interactivity hitherto undreamt of” (Moon, 1996, p. 98). This interaction and collaboration coupled with the personal empowerment the Web

gives students have been viewed by some writers and researchers as key forces in the increase in distance delivered pre-service teacher education in many countries (Haddid, 2000; Moon, 1996; Perraton & Potashnik, 1997).

The interaction of distance education and pre-service teacher education raised further questions. Distance delivery introduces the need to consider the media best suited to deliver content while maintaining the elements deemed central to program integrity (Moore & Kearsley, 1996). So, for example, program planners of pre-service teacher education programs must consider the balance they see as important between the delivery of the program's curriculum and the interactions and collaboration of teachers and students, and students and students. "A new generation of courses, often using experienced teachers in schools in a mentor role, are forging new models of how to resolve theory practice dilemmas" (Moon, 1996, p. 99).

There are other external forces that also appear to be significant in the increase of distance delivered pre-service teacher education programs. These include the pressure on institutions to compete for students, or as Perraton (2000a, p. 73) put it "becoming aware of a demand" and, the need to address equity issues as institutions are urged to respond to changing student and community demographics. An African report illustrated how these forces can interact within distance education.

Distance learning has been used to meet critical social needs such as strengthening primary school teaching or improving access to tertiary education for those disadvantaged by economic, social or individual circumstances. As a result, distance learning, where it has been used, is coming to be viewed as an integral part of the system, not a 'fringe

element.’ (Association for the Development of Education in Africa (ADEA) Working Group on Higher Education, 1998, p.30).

In a Commonwealth of Learning report the capability of distance education to provide equity of access and opportunity was again noted.

Thus distance education has the potential to reduce some of the differences between the educationally advantaged and deprived, overcoming the handicap of distance by reaching those who live far away from school or college, or the handicap of time for those who cannot attend full-time (Perraton, 1991, p. 2).

Moon (1996, p. 101) captured the sense of change in distance delivered teacher education with the following comment.

There is a sense of excitement in the field [of teacher education].

Across very different countries and contexts there are many common features to the unfolding agenda. The next few years, into the millennium, represents an important opportunity for rethinking and redirecting open and distance forms of organisation.

### Statement of the Problem

This section narrows the focus of the study by drawing on references specifically related to distance delivered pre-service teacher education and outlines support for the study.

The identification of issues and challenges faced in particular programs of distance delivered pre-service teacher education programs, and discussion and analysis of the way those issues and challenges have been addressed to develop good

practice was needed. The literature revealed this need. Robinson (1997, p. 18) commented, “Though there is a track record of achievement in the use of distance education for primary teacher education and training, it has not yet been fully exploited nor a sufficient variety of models developed and tested. An evaluation and research base needs to grow alongside it.” In a World Bank commissioned report that explored teacher education at a distance, particularly noting the use of new technologies, Perraton and Potashnik (1997) called for a research agenda to explore (in relation to the entering background of students and the development status of the country) the elements and balance needed in teacher education programs, the allocation of resources, and the match between different methods of educating teachers and the different competencies that they need to develop. Perraton and Potashnik concluded that there is a need to ask “a broad set of questions to tell us about the best ways of using distance education for teacher training.” (p. 29), noting further that the existing research is quite limited. Moon (2000, p.7) suggested it is time to reconceptualize teacher education through the development of policies and guidance that recognize open, flexible, and digital delivery of teacher education. Nielsen (1997, p. 313) suggested that “distance delivery systems [of teacher education] may become the obsession of the early twenty-first century” as countries shift their efforts into distance education modes. He indicated that we must take care not to lose sight of quality. Two doctoral dissertations also supported the development of an overview of distance delivered pre-service teacher education. Zvacek (1989) concluded from her evaluation of the Zimbabwean pre-service teacher education program that there is a need for evaluation research into distance delivered

teacher education that is based on the work of internationally recognized distance educators. Such work, observed Zvacek, should measure strengths and weaknesses, “standardize the [evaluation] process and develop program credibility.” She went on to say “regardless of the model chosen, the crucial element of evaluation is that the results are disseminated and used to improve the quality of the program” (Zvacek, 1989, p. 202-203). Wort (1997), whose work was also an evaluation study (of Tanzanian distance delivered programs), made a strong call for a new model of distance delivered pre-service teacher education that promotes supportive strategies and “attempts to build in mechanisms for collaboration between tutors, learners and institutions” (p. 238). Wort noted planning and development must draw on the knowledge and experience of institutions and wider networks.

The lack of shared knowledge and experience of distance delivered pre-service teacher education indicated the necessity for developing understanding of this phenomenon in order to support program planners in effectively designing, delivering, and managing programs. Perraton (1993, p. 16) summed up the importance of drawing on experience and developing shared knowledge, and in doing so highlighted the problem that this study set out to address.

Can we, for example, identify management approaches that are likely to be more and less successful, mixes of media that seem to work best, or organisational structures that have led to smooth and effective administration? While generalization is difficult, and the worldwide experience of distance education is varied, evidence on the conditions of success, too, is likely to be of value to planners.

The question this dissertation sought to answer is:

What does an analysis of specific programs of distance delivered pre-service teacher education show to be good practice that should guide the design, delivery, and management of such programs?

Two further questions supported the study's focus:

1. What were the design, delivery, and management issues and challenges that the programs faced?
2. How do the responses to the issues and challenges, illustrated by the programs, reflect the core elements provided by the conceptual framework?

### Purpose of the Study

The purpose of this study was twofold. First, it aimed to identify the design, delivery, and management issues and challenges that arise in the distance delivery of pre-service teacher education programs. Second, it sought to identify good practice used in meeting these issues and challenges. This was achieved through an examination and analysis of distance delivered pre-service teacher education programs using a conceptual framework developed from consideration of the teacher education and distance education literature. As distance delivered pre-service teacher education programs exist throughout the world and use a variety of distance delivery modes, data were found in a wide range of scholarly publications. The programs reflected the diversity of approaches to distance delivered pre-service teacher education as well as varied responses to political and economic forces.

### Significance of the Study

To be able to provide quality education, good teachers are needed (Nielsen, 1997; Perraton, 1993). Teaching has become increasingly complex and, as a general consequence, teacher education programs have lengthened and standards have risen (Delannoy, 2000; Perraton, 1993).

The study sought to contribute to good practice in the developing area of distance delivered pre-service teacher education by providing new perspectives and a synthesis of work in the field. This information should benefit both institutions in the process of developing programs and those with established programs. It should give a better perspective for the future and help program planners gain a deeper understanding of distance delivered pre-service teacher education.

The responsibility for preparing teachers must be taken seriously. Preparation of good teachers benefits all levels of a society. Programs of teacher preparation should reflect careful thought about the types of teachers that are valued and the core values of the society they are part of. “As countries shift ever more of their teacher education efforts into distance education modes they must take care not to lose sight of the need to establish and maintain high standards of quality” (Nielsen, 1997, p. 314).

Attracting quality applicants to pre-service teacher education programs should be a concern for both the institutions that offer the programs and the communities where teachers will work. Until relatively recently, quality applicants who lived in remote or isolated locations or whose life circumstances made access to a program impossible did not enjoy equality of opportunity to become teachers. This has meant

that many quality potential teachers, who lived in difficult-to-staff areas, could not even consider entering the teaching profession. While distance delivery has always provided some options for these people, the advent of new communication technologies has opened up new possibilities and seems to be one of the factors that have caused some teacher education institutions to consider alternative delivery options of their pre-service programs.

It is important for students who commit to programs using distance methods of delivery that their option is perceived as comparable to that of traditional delivery. Institutions then must ensure that they maintain standards, equally promote distance delivery, and provide support that is just as comprehensive as that provided for on-campus students. This study sought to highlight design, delivery, and management elements that must be considered in meeting these obligations.

In the final analysis, there are benefits for children and for the wider society. Good teachers impact on all levels of society. Ultimately, it is the school system that largely produces the leaders, the thinkers, and the actors in a society. “At stake is not only the quality of teacher education programmes but the quality of education that course completers will create for their own students” (Nielsen, 1997, p. 314).

It is hoped that this dissertation will stimulate heightened awareness of distance delivered pre-service teacher education and create dialog on the topic particularly among program planners who are developing distance delivered options.

### Definitions and Terms

The following terms and definitions were used for the purposes of this study:

*Distance delivered:* delivery where the students are normally spatially separated from the faculty/lecturers and the institution providing the program.

*Pre-service teacher education:* first formal teacher training provided for students. This is also referred to as initial teacher training in some British literature.

*Elementary (primary):* first years of formal schooling, usually pupils from age 5 to 12. There are national and regional variations to this.

*Teacher education program:* course of education that leads to certification as an elementary or primary school teacher.

*Under-qualified teachers:* people who are employed as teachers but have not undertaken any formal teacher education.

*Field experience/practicum/practical training:* stage of a pre-service teacher education program during which students work in classrooms supervised by experienced teachers and/or faculty.

*Tutor/Faculty/lecturer:* academic staff who teach in the pre-service teacher education program. The term tutor is the most commonly used.

*Teacher* is used in preference to the term *instructor*.

*Students* generally refers to the teacher trainees; and *pupils* refers to the children taught in schools.

Every endeavor was made to apply the above terms and definitions consistently but the use of literature from all parts of the world presented some difficulties in adhering to this. Spelling follows American English conventions but, again, some inconsistency is apparent when quotes are taken from literature based on British English spelling conventions.

### Assumptions of the Study

Key assumptions inherent in this study were:

1. Pre-service teacher education programs are necessary to produce good teachers.
2. Pre-service teacher education programs are organized, and these patterns of organization are reflected in the pattern of delivery.
3. Programs are viewed as a structure that delineates what is important and necessary in terms of attitudes, skills, and knowledge. When attitudes, skills, and knowledge are found to be common across many programs, programmatic values emerge. For this dissertation, these programmatic values, along with core program elements identified through the literature on teacher education programs, are the aspects of a pre-service teacher education program taken to be important and required to be incorporated into any distance delivery of a pre-service teacher education program.
4. An examination of the literature provides valid case data.

### Limitations of the Study

The following limitations are inherent in the study:

1. There was no attempt in this dissertation to enter the debate on the substance and quality of pre-service teacher education programs, nor to focus on questions related to specific curricula within programs. Rather, the focus was on the distance delivery of pre-service teacher education programs as a complete package: the issues and challenges associated with the design, delivery, and management of a

guiding planning framework to show how the relative balance of program elements may shift and reflect delivery and context factors.

2. In addition there was no attempt in this dissertation to address the location of pre-service teacher education programs within the structures of higher education. Some examples are at pre-university level, others university undergraduate, and still others at a graduate level.

3. Although qualitative research is appropriate when a subject needs to be explored, variables cannot be easily identified. Theories need to be developed rather than drawn on and there is a need to develop a detailed view (Creswell, 1998). It follows that replicability, validity, and generalizability cannot be assumed, although it is valuable to develop a “fuzzy generalization-or proposition-which shows how the discovery *may* [italics in original] apply more widely” (Bassegy, 1991, p. 55). Methodology and the questions that arise about choice and appropriateness are addressed in Chapter 3.

4. The programs of distance delivered pre-service teacher education, given the search tools available to this researcher, were those that could be located through a search of the literature and the other search activities outlined in Chapter 3. While the analysis and critique of these was used to develop generalizable statements of good practice, it is recognized that local settings bring cultural and institutional variations and that the prime purpose of any statements is to increase awareness of distance delivered pre-service teacher education and to promote educational discourse.

5. The data used in this study also brought some limitations. The documents used had been written for a variety of audiences. Thus close analysis and comparison highlights some areas where data are uneven.

### Organization of the Study

Chapter 2 presents a review of the literature fields that provided the conceptual framework upon which the examination of distance delivered pre-service teacher education programs was based. Chapter 3 details the research methodology that was chosen as appropriate for this study. Chapter 4 presents the results and the final chapter, Chapter 5, discusses the results and provides recommendations for future research.

### Summary

This study is a literature-based, international, meta-analysis of programs of distance delivered pre-service teacher education that aims to provide a knowledge base of good practice from which to question and evaluate distance delivered pre-service teacher education programs. The knowledge base that has been produced should provide information and foster understanding about the issues and challenges of such delivery. The foundation provided by this work may encourage further inquiry and research into distance delivered pre-service teacher education.

## Chapter Two

## REVIEW OF LITERATURE

## General Introduction

This chapter reviews the literature that provided the conceptual framework for this research study. Two major bodies of literature formed the basis of the review: teacher education and distance education. In addition, the small body of general literature related to distance delivered pre-service teacher education provided a specific focus on the distance delivery of teacher education.

Through a review of teacher education literature, core elements that underlie pre-service teacher education programs were identified. These core elements are important, because decisions about the weightings they carry, as well as the level of interaction and collaboration deemed necessary by students and faculty, influence design, delivery, and management decisions. A range of internal and external forces work to shape the core elements of a pre-service teacher education program and these were also explored. These forces are important because they affect the design, delivery, and management issues and challenges that arise in distance delivered pre-service teacher education.

Literature on distance delivered pre-service teacher education programs provided general information that indicated distance delivery of pre-service teacher

education is viable. Particular forces impacting on distance delivered pre-service teacher education were identified.

The distance education literature provided information on the design, delivery, and management issues and challenges associated with the delivery of programs.

The particular issues and challenges associated with the design, delivery, and management of distance delivered pre-service teacher education programs that the programs revealed are the subject of Chapter 4. The programs reflect the international nature of distance delivered pre-service teacher education.

#### Teacher Education: An Overview of Program Elements

##### Introduction

Elementary teachers need the knowledge and skills that will equip them to teach a large number of subject areas to a broad diversity of pupils of an age range that is generally, but not always, from 5-12 years. What, then, constitutes the core elements of a pre-service teacher education program that will prepare new elementary (primary) teachers?

It would be possible to answer this question by thinking about the number of hours, or a list of courses or similar elements that constitute a program. Those aspects are somewhat reflected in this review. However, pre-service teacher education programs are not as simple as that first statement suggests. Instead, they are complex, multi-faceted offerings. Any discussion of pre-service teacher education programs must also acknowledge this broader picture. Ultimately, both the core elements and the multiple complexities must be incorporated and allowed for in any program. This

section of the literature review looks at the mix of core elements and complexities that form a pre-service teacher education program.

In summary, this section of the literature review focuses on the process and learning associated with becoming a teacher; on the cultural, historical, social, and institutional contexts in which teacher education is placed; and on how forces in these contexts shape the core elements.

### Core Elements and the Context of Teacher Education

To begin the exploration of pre-service teacher education programs, some core elements common to all programs are identified. These core elements ground and guide programs.

Perraton (2000a, p.58), drawing from his work in developing countries, observed that almost all programs contain four elements: general education, teaching about content, developing knowledge about children and field experience work. Ducharme and Ducharme (1999) identified three broad categories of core knowledge: subject matter knowledge, knowledge of students, and knowledge of how to teach. The concept of a knowledge base is also recognized and accepted in the (American) National Center for Research on Teacher Learning (NCATE) teacher education guidelines. Naish (1990, p. 27) outlined four major elements in initial teacher education courses. He identifies the first as dealing with the process of teaching, the second loosely as educational theory, the third as practical experience, and the fourth as subject studies. Schwartz (1996) identified the need for knowledge of social, physical, emotional, and cognitive well-being of the child, pedagogy, subject matter content and enactment strategies, educational theory, and clinical practice. Schwartz

also identifies qualities such as sensitivity, intelligence, and enjoyment of children as being necessary.

Howey (1996, p.149) described a broader or extended set of core elements for programs: sufficient knowledge and skill to practice, breadth of professional education understanding, zest for continued study, research/reflection competence, and personality characteristics for effective practice. He also talks of content knowledge, school curriculum, theoretical constructs, craft wisdom, and scholarship. Darling-Hammond (1999) is another researcher who identified an extended set of core elements. In doing so, she reminds us that these elements are shaped by judgments about what teachers do. For her, teaching is more than the transmission of knowledge. In her study, she acknowledged the complexities of modern society and suggested that this means teachers must be able to teach for understanding. For her, teachers need understanding of subject matter in ways that allow them to structure it to meet a range of student learning needs. To do this, she noted, teachers also need a broad type of pedagogical knowledge that will include an understanding of the factors that shape people's lives, such as culture, gender, and language. Darling-Hammond sees the following as core elements: understanding of how children learn; a command of teaching strategies; knowledge of resources and technologies; and, skills to interact with others. Finally, Darling-Hammond stressed the need to be able to analyze and reflect on practice.

The general elements suggested by Perraton, Ducharme and Ducharme, Naish, and Schwartz are rather broad and lack integration of content and method. Perraton's comments, coming from the field of distance delivered pre-service teacher education,

did give that added perspective but reflected too narrowly the context and conditions of a developing country. It is the work of Howey and Darling-Hammond that recognized broader elements and the need for integration. Current literature supports their broader perspective and integrative approach.

Ishler, Edens, and Berry (1996) reviewed the preparation of elementary teachers and, after analyzing themes, reform recommendations, and current practice, identified five “interrelated conditions and conceptions of elementary education curriculum that should vastly influence teacher education as a whole” (p. 372). They indicated that the elementary curriculum should be:

- conceived as a fluid continuum of professional development, developed collaboratively by both public school and university professionals.
- interdisciplinary, integrated, problem oriented, socially constructed and student centered.
- suited to preparing elementary school teachers to teach a multitude of different subject matter to diverse students.
- drawing from an integrated studies approach in order to narrow the conceptual gaps between theoretical and practical training as well as between administrators and teachers.
- providing opportunities to develop technological competence, which can serve as a learning bridge for students from diverse cultures and for those who possess differing learning styles and for teachers who must assess students in multiple ways (Ishler et al., 1996, p. 372-374).

Having discussed core elements and noted the current trend towards the development of integrated programs, the impact of context on programs of pre-service teacher education has to then be acknowledged. Some pre-service teacher education programs, such as those in many developing countries, will develop core elements and little more. Perraton (2000a, p. 60) recognized this basic form of pre-service teacher education when he commented that many trainee teachers have little more than an elementary or junior high education themselves and this restricts the expansion of pre-service teacher education programs beyond the core. In other contexts, development of the core elements is built into the type of broader focus envisioned by Howey and Darling-Hammond and the integrated programs reviewed by Ishler, Edens, and Berry. An illustration of this is provided in many developed countries, where there is a move to place pre-service teacher education at the graduate level (Schwartz, 1996). Then core elements usually become part of a deeper thematic exploration of ideas.

In all cases, once these core elements are mixed with the particular emphasis and balance that any one institution will provide and with the educational background of the students, variations in programs develop. Institutional emphases encourage institutions to develop specialisms and distinct philosophical positions that bring special character to programs. However, this review, rather than focusing on special-character programs, takes a broad perspective in order to examine common program values identified from the writings of contemporary scholars and researchers and to develop an understanding of distance delivered pre-service teacher education as a whole. The program values of pre-service teacher education programs are often

presented as thematic conceptual frameworks, or sets of attributes that cohere to form the values of an effective pre-service teacher education program (Shulman, 1990; Soltis, 1990). Young (1998) suggested that what is needed is a connective approach wherein the program values are interwoven with, and reflective of, the directions of the wider society. Identification of these wider societal directions will be drawn out in a later section of this review, where some of the key external and internal forces that shape pre-service teacher education are explored.

Program is a concept that in itself suggests coherence. A pre-service teacher education program must be sufficiently coherent to be instrumental in socializing pre-service teacher education students into the professional group they will become part of (Howey, 1996; Khamis, 2000). This coherence is another attribute that needs to be considered when delivery is undertaken.

It must also be recognized that the contexts where pre-service teacher education programs are delivered affect the program. Contexts need to be conducive to learning and to nurturing young professionals. Context for pre-service teacher education includes the schools where field experience or practicum occurs. Field experience is commented on in more depth later in this review.

In addition to recognizing coherence and context, all teacher education programs have a history of their own that shapes them and, in turn, reflects the general history and development of pre-service teacher education programs in their setting. These histories become another of the factors that shape and impact on design, delivery, and management. North American institutions, for example, mostly reflect a Germanic model of higher education, while those countries with connections

with the British Commonwealth reflect a British model (Goodlad, 1999). The Germanic model saw teacher education move into universities and take on a liberal studies (arts and sciences) focus and a credentialing approach. The British model emphasized a broader general education and craft knowledge combination, with ongoing links from theory to practice through the use of model or “normal” schools. In addition, the trend has recently been for teacher education institutions based on the British model to merge or become universities. Goodlad (1999), who undertook a study of the education of teachers in the late 1980s, has suggested that in American approaches to teacher education, the university-based approach has led to a situation where only a very few institutions show evidence of careful *program* (italics mine) design. Cowen (1990, p. 55) suggested that the British model, which he sees as currently linking teacher education more highly with schools and emphasizing the “craft” skills, may have the “disadvantage of separating teachers, in their initial training, from a systematic introduction to those forms of knowledge which encourage reflection of the broader aspects of the teacher’s role and the social, political and economic significance of education.” Here is an illustration of program balance (including field experience) being subjected to pressure from outside forces.

#### Field Experience—a Unique Characteristic of Teacher Education Programs

Teacher education programs have intricately interwoven links with the world of practice or field experience (Berliner, 2000; Darling-Hammond, Wise, & Klein, 1995; Goodlad, 1999; Ishler et al., 1996). These links can take many forms, the usual ones being partnerships (the Open University model), laboratory, Normal Schools (used in New Zealand), and professional development schools (United States). This

linking of programs and practice means that many decisions about the education of teachers are seen as a shared responsibility.

Field experience provides a testing or proving context for the theoretical and curriculum courses in a program. It is enacted in many forms such as block practice, microteaching, and observations.

Field experience is the most universally acknowledged core element of a pre-service teacher education program. No researcher or writer read for this literature review suggested field experience was unnecessary. Many writers and researchers have called for greater links with schools (Howey, 1996; Imig & Switzer, 1996; Ishler et al., 1996; Khamis, 2000; Perraton, 2000b; Walker, Preston, & Mitchell, 2000). There has also been a strong general call for new ways of forging these links (Imig & Switzer, 1996; Ishler et al., 1996) by clarifying roles (Khamis, 2000), developing laboratory training that promotes critical analysis and reflection (Howey, 1996) and offering intensive internships in diverse settings (Ishler et al., 1996). There have been questions, as well, about the effectiveness of field experience. Ishler et al. (1996, p. 360) reported on research that suggests that field experience outcomes are related primarily to socialization into the culture of teaching rather than to skills development. The writers mentioned also noted that, in general, institutions delivering teacher education have little ability to select and supervise sites of best practice, as they are limited to the use of local schools. However, an Australian example (Gibson & Gibson, 1995) provided a possible new model: Real-life teaching situations used to present examples of best practice, were viewed and interacted with through the use of interactive television. This approach opened up the use of remote

and out-of-commuting-distance schools for some field experiences. This development provides an example of the way sites of best practice might now be selected to meet particular program needs.

In contrast, Young (1998) noted that a consequence of many of the new shortened programs and the school-based programs was that experience in a single school can be an inadequate model for a future teacher.

Some writers highlighted the need for specialized field experience. Multilevel teaching experience for rural schools was indicated as a neglected focus (Beckner, 1996). Likewise, inner-city schools pose another set of practice challenges. Haberman, quoted in Dill, discussed the need to work with “children in poverty” (Dill, 1996, p. 952). The need to address and understand multicultural populations and to prepare teachers for diverse classrooms was identified (Duhon, Peoples, & Page, 1996; Howard & del Rosario, 2000; Nieto, 2000; Walker et al., 2000). Howey (1996, p. 163) supported this need for special preparation by indicating that he saw students needing “the understandings, abilities and dispositions to understand and celebrate individual and cultural diversity.” Iredale (1993, p.18) commented that in many developing countries pre-service teacher education is based on urban assumptions and it may be necessary to include rural teaching practice.

Many programs, again recognizing the diverse settings teachers work in, extend their field experience beyond a multicultural orientation to introduce a global perspective by offering international field placements (Howey, 1996). Such initiatives can raise language and cultural issues, although language issues are not isolated to cross-cultural exchanges. As Iredale (1993) noted, within countries an

important issue for some students is that their first language is not the language of instruction.

Ideally, field experience should be not only about solving immediate problems and allowing the development of teaching skills, but also about learning to enquire and reflect. Howey (1996, p. 145) gave a strong reminder that teacher education preparation is not so much about knowledge bases as it is about “how curriculum is represented to and engaged in by prospective teachers in pedagogically powerful ways, that is, in contexts that are, in fact, conducive to learning to teach.” This reflects a strong call in the literature for student teachers to develop reflection skills and habits. Ishler et al. (1996) concluded that teacher education programs should encourage reflective analysis. Roth (1999) and Pring (1994) noted the importance of critical reflection, while Simco (1998) emphasized focused dialogue [sic]. Graves (1990) called for an intellectual framework to underpin practice. Hursh (1995) stated that the reflection and critique must work to uncover relationships of power and influence and encourage new ways of teaching and organizing schools. Graves observed that the habit of reflection is essential to this framework. Swanwick (1990) concludes that the profession as a whole will suffer if critical reflection and self-evaluation and the extension of perspectives beyond a single classroom are not maintained. These writers also indicated that this process requires dialog and Gore and Zeichner (1995) stressed that the reflection and dialog need to be a shared experience. This involves the teaching community entering into dialogical relations (Bullough & Gitlin, 1991) with teachers and school governing bodies. Edens (2000) reminded us that learning and reflection are active, constructive processes that need to

be facilitated through communication. She also noted the constraints on reflective discussion that occurs when students are at multiple field sites, and she outlined an initiative where an on-line discussion group was initiated to overcome this difficulty. Based on an analysis of postings, evidence was found that students began to function as a professional community, to ask questions, and to gather data upon which to reflect. Edens concluded that on-line discussion is viable for promoting reflection and for linking faculty with the teachers at the field sites. This recognition of the need for focused, meaningful reflection has been well supported (Gore & Zeichner, 1995; Hargreaves, 1995; Sultana, 1995), all of whom have stressed that reflection is a deep process that must be located within discussions on the purpose of education. These authors have voiced a common concern that there is a tendency to think that teaching is necessarily better merely because teachers are deliberate and intentional in their actions.

In summary, field experience should provide students with the opportunity to not only experience teaching but also to develop and reflect on links with the wider context within which education occurs. Purposes for education are set not only by the teaching profession but also by the wider society to which schools and teachers belong. Many factors influence the values that a society wishes to see reflected in teacher education programs. While these factors are not constant, there are many that can be identified at this time as important and influential.

#### Internal and External Factors that Shape Pre-Service Teacher Education Programs

As has been indicated, an analysis of the literature reveals that teacher education is developed and delivered within a complex mix of institutional, societal,

political, and educational forces. Imig and Switzer (1996) discussed a change climate that exists around teacher education while O’Keeffe (1990, p.79) noted “Teacher education belongs to a set of vital activities which cannot be analysed satisfactorily outside their much wider contexts.” Sindelar and Rosenberg (2000) observed that teacher education is a servant to many masters and is called on to address many of society’s issues and concerns.

Almost everyone has experience of some sort with teachers (Guthrie, 1999). Howey (1996, p. 162) referred to this almost universal link with teaching as the “public nature of teaching and learning.” For example, parents remember their schooling and often hope for teachers who will enable their children to achieve more than they did. Teachers remember their pre-service teacher education programs and often feel current courses lack sufficient links to practice (Darling-Hammond et al., 1995). Members of the public often regard teaching as a second-level profession and politicians often criticize teachers rather than address wider education issues (Imig & Switzer, 1996). Additionally, it is not uncommon for pre-service teacher education programs to have to lower certification standards to accommodate the need to educate teachers under situations that are promoted as emergency conditions (Darling-Hammond, 1999; Schwartz, 1996). Few other professions encounter such a range of opinions and actions that they must respond to and consider when developing their programs (Berliner, 2000; Furlong, 1996).

Looking more broadly, the first source of a number of issues that affect pre-service teacher education programs and their core elements can be identified within the teacher education institutions themselves and their pre-service teacher education

programs. Many writers (Dill, 1996; Howey, 1996; Ishler et al., 1996; Schwartz, 1996) have addressed the tensions between outcomes expected by the university and expectations sought by the teaching profession. Clark (1999) called this the need to face both toward academia and the profession. Interdisciplinary tensions, especially in institutions adopting an American model, where time can be spent outside the teacher education program, make agreement on core elements and a thematic program difficult to achieve (Howey, 1996; Ishler et al., 1996; Schwartz, 1996).

Fragmentation is often the result (Darling-Hammond, 1999). Miller (2000, p. 72) contended that the diverse student population of twenty-first century schools requires the crossing of traditional discipline boundaries in teacher education so that programs can develop the complex set of skills teachers need. Miller's research with faculty found that administrative barriers to interdisciplinary work needed to change, and that more understanding of team work and interdisciplinary program development was needed.

Reward systems for academics often work against pre-service teacher education. Research and publication generally being the criteria for promotion, academics' specializations can take precedence over program themes and core elements (Goodlad, 1999). However, Clark (1999) saw a balance as being possible, with research feeding practice within a profession-based focus. Somewhat in contrast, Bridges (1996, p. 53) asserted that some academics had to choose between the necessary teaching, pastoral and administrative work associated with pre-service teacher education and research and publication. He thought the needed balance might

be found by acknowledging some academics would chose the first type of role and some the second or third.

The second major source of issues that affect pre-service teacher education is the State (Walker et al., 2000). Local and national governments in many countries have identified the education system (and thus teachers) as an area in need of reform (Bottery & Wright, 2000; Dussel, Tiramonti, & Birgin, 2000; O'Keeffe, 1990; Popkewitz, 1998; Torres, 2000). Young (1998, p. 51) observed that this emergence of international reforms led by the United States and taken further in the United Kingdom, Australia, New Zealand, and some Latin American countries than in Asia—as having touched almost every country in the world. Schriewer (2000) indicated that educational reform trends are moving towards a world system and a global network of interrelations and interdependencies. There is, he noted, a “worldwide universalization of educational ideas, models, standards, and options for reform” (p. 334). Government policy solutions to complex educational situations have included, in almost all cases, western-style restructuring, cost cutting, alternative forms of teacher education, and the introduction of standards for teachers. For some other countries (Russia, South Africa) the collapse of previous government structures and rapid economic dislocations have left in their wake a dearth of resources and mixed attempts at educational restructuring (Kerr, 2000).

The standards debate, a policy initiative of many governments, has a focus on outcomes. Outcomes, however, fail to account for “wholeness” (Bottery & Wright, 2000) and for the distinctly different contexts that pre-service teacher education programs are found in. An outcomes focus also stresses practical “can-do”

competencies (Pring, 1994), as well as knowledge, competitive and individualistic relations, and formalization of work through job descriptions (Bullough & Gitlin, 1991).

Many countries have formed some type of “standards board”, for example, the Council for the Accreditation of Teacher Education (CATE) in England, and The Teachers Council in New Zealand. These boards are charged with establishing the national standards for initial teacher training and thus, indirectly, with the standards for entry into teaching. Their existence and their control of entry standards tend to undermine professionalism and autonomy within teaching. It is an irony noted by several writers that at the very time these boards have been established by governments, there is also often a government move to introduce new forms of certification and (quicker and often less rigorous) entry to teaching (Dill, 1996; O’Keeffe, 1990). National entry standards for teaching produce another irony because they encourage program curricula that cannot be site-specific (Schwartz, 1996). As a result beginning teachers may not be as well prepared for local situations. It was also noted that national standards can reduce innovation in programs (Bottery & Wright, 2000).

Another response to the standards debate has come from teachers themselves. In many countries a set of professional standards for entry to, and continued membership of, the profession has become an important goal for teachers (Howey, 1996; Khamis, 2000) as they move to strengthen their profession. These standards then become a force that also shapes programs.

Linked to this trend in standards development is a debate over alternative teacher certification (Dill, 1996) and the quality of these provisions. Edwards (1990, p. 184) warned that emergency or alternative models of pre-service teacher education “may be transformed into a long-term cost-cutting model to the serious detriment of teachers and pupils.” Alternative certification provisions have included the introduction of one-year programs for graduates (a Post Graduate Certificate in Education, or PGCE in England, Canada, Australia, and New Zealand), internship and school-based programs, emergency (uncertified but trained-on-the-job provisions) and various other types of shortened programs. Some of the programs of distance delivered pre-service teacher education drawn on for this dissertation may be examples of alternative routes to certification in their country of origin. Where such programs provide insights into responses to issues and challenges this information will be used.

Many countries have adopted educational policies that focus on competition and deregulation (Dussel et al., 2000; Popkewitz, 1998; Torres, 2000; Walker et al., 2000). This has often resulted in restructuring of the education sector, cost cutting, and an emphasis on competition (Edwards, 1990; Popkewitz, 2000; Walker et al., 2000). The resulting market focus often portrays teacher education groups as representing provider capture and acting against the interests of consumers (Moore, 1994). Edwards, however, noted that as a positive aside and an interesting consequence, the changes have resulted in new methods of attracting non-traditional entrants to teaching and have often introduced the use of distance delivery.

National educational reforms undertaken in the many countries where there has been restructuring have also affected the school sector. School reform was identified as a factor that has changed the theory/practice links, obliging institutions to look at assumptions about the relationships they have with schools (Husbands, 1996; Wilkin, 1996). The old compartmentalization that often existed between schools and teacher education institutions is being replaced by genuine, but formal, partnerships (Brown, 1996; Downes, 1996; Edwards & Collinson, 1996; Furlong, Whitty, Miles, Barton, & Barrett, 1996). However, contributions from the partners need to be clearly defined and integrated so that they provide both the best curriculum for the students and a link to reflective practices (Wilkin, 1996). Shared responsibility is being recognized and genuine partnerships developed (Furlong, 1996).

Many writers see that governmental policy measures, such as those described have had further impacts on teaching, including a declining interest in teaching as a profession (Dill, 1996; Duhon et al., 1996; Edwards, 1990), low social status for teachers (Schwartz, 1996; Zeichner, 1999) and a lack of respect for the work and research of teachers and teacher educators (Berliner, 2000; Cochran-Smith & Lytle, 1999; Nixon, 1995; Zeichner, 1999). Young (1998) observed that policy changes have demoralized teachers and teacher educators and produced limited gains in terms of teacher effectiveness. It is therefore important to create pre-service teacher education programs that do meet standards that reflect the research and experience underpinning best practice and will restore confidence in teaching and teachers (Sykes, 1999). In doing so, Sykes suggested it is also important to avoid basing

certification on requirements designed to satisfy political and societal concerns rather than on requirements that foster basic skills and knowledge coupled with a deep understanding of children and learning.

Society itself is changing, and many of the societal changes are also global changes (Young, 1998) that affect teacher education. First, a complex and sometimes seemingly contradictory mix of demographic trends is operating. The general population in many countries is becoming more diverse (Trent, 1990). Alongside this, there is more acceptance and integration of diversity while at the same time there is more recognition of indigenous peoples and their languages and cultures. As the call for teaching in indigenous and native languages increases, there is often a gap between the cultural/linguistic background of teachers and their pupils (Trent, 1990; Zeichner, 1999).

In most countries, there is also a move from rural to urban and concentrations of populations in particular parts of countries. The rural/urban divide is identified as an added complexity in developing countries. Rural areas are difficult to attract teachers to because housing, roads, and support services are often insufficient or barely exist (Iredale, 1993).

During the 1990s many countries have had a rise in the numbers of elementary school age or school going students (Lawton, 1990; UNESCO, 2000). Others, such as many African countries, are striving to introduce universal education. Alongside this trend, the teacher demographic trends are relevant too. Teaching is increasingly dependent on women (Lawton, 1990, p. 149). However, as Lawton went on to comment, this is a time when women's career prospects and patterns are

changing, as women teacher graduates are now often attracted to other, less traditional careers. This is true, Lawton pointed out, too, for the pool of trained (largely women) teachers currently out of the service, who in times past could usually be enticed to return to teaching at times of shortage. Overall, the teaching service is an aging one in many countries. Ultimately, Lawton says, this range of pressures on the pool of teachers is almost certain to lead to moves to recruit unqualified or underqualified teachers. Iredale (1993) noted that in many developing countries, a wider issue is that the death-rate associated with AIDS is depleting the already inadequate pool of teachers. The teaching pool is further depleted as teachers move from teaching to other professions where AIDS deaths are causing shortages of personnel.

A further societal change underway is the development and use of technology. Technology is identified as having the potential to change fundamentally the current nature of teaching and schooling (Imig & Switzer, 1996, p. 220). New interactions and new types of interactions are possible. Technology makes new and different links possible with people and institutions who might be partners in program delivery (Imig & Switzer, 1996). While there is recognition of this potential, there is also realization that prospective teachers must be introduced to the new technologies during their initial training in ways that develop understanding of the potentialities of the technology (Darling-Hammond, 1999; Schwartz, 1996; Willis & Mehlinger, 1996). One type of response (in England) is to develop criteria that set out standards of information-technology competency that must be met by pre-service teacher

education students (Jacques, 1998, p. 20). Moves such as this, in effect, set another core element that needs to be incorporated into pre-service teacher education.

The national context and development status of a country is another broad factor likely to shape decisions at the national level about the nature of a pre-service teacher education program. In most developed countries (in spite of alternative certification options) there is a trend to lengthen programs of pre-service teacher education and to link research, teaching, and practice through developing professional links between teacher education institutions and schools and teachers (Clark, 1999; Darling-Hammond, 1999; Khamis, 2000; Sultana, 1995; Walker et al., 2000; Wideen, Mayer-Smith, & Moon, 1998). In this type of development, teacher education is viewed as a lifelong process and teachers as researchers into their own practice. There is support for lengthened programs from research studies that show students from extended teacher education options are more satisfied with their preparation, viewed by colleagues as better prepared, and more likely to stay in teaching (Darling-Hammond, 1999, 2000). In earlier work, (Darling-Hammond et al., 1995) reviewed research on teacher preparation and concluded that teachers who completed a full program of preparation were more highly rated and more successful students than those without full preparation. Berliner (2000) suggested that it takes about five years to proceed from novice to a competent stage of development. However, recent research by Kent (2000) found no difference in the classroom problems encountered by students from short or full programs of preparation.

Perraton (2000a) noted that in under-developed countries (African countries in particular), the pressure to train large numbers of teachers, often quickly and on-the-

job, has meant the focus has been on developing programs that produce large numbers of teachers in a short time. Perraton also noted that in some other developing countries, particularly where Open Universities have been established, there is a growing tendency to recognize the life-long nature of teacher education. In these settings, the lengthening of teacher education is through in-service study designed to upgrade teacher qualifications not as seen in some developed countries where the move is to post-graduate pre-service teacher education. This in-service focus is often part of a move to gradually shift the teaching profession to a degressed profession and to raise its status.

In many ways, the literature has shown that the provision of pre-service teacher education is a developmental journey from pupil-teacher type approaches (in developing countries) to moves in developed countries to an all-graduate and postgraduate status. Linked with this development have been questions asking where pre-service teacher education should be placed—in the schools, in separate specialist institutions, or in the universities? Also asked has been who should control pre-service teacher education—local authorities, the profession, the colleges and universities, or a central registration board.

### Summary

Teaching is generally recognized as a caring profession that works to achieve broad societal goals deemed to be concerned with fundamental and universal good. Achievement of that universal good necessitates specialized knowledge and skills that individuals need to learn and practice (Hirst, 1996).

The literature reviewed provided an understanding of the core elements, which often included specialized knowledge and skills that would provide the education regarded as appropriate for becoming a teacher. Examination of the literature revealed some consensus about these core elements in a pre-service teacher education program:

- Focused field experience that truly links the taught program with the experiential
- Reflection that develops dialog and questioning of the purpose and structures of education
- Content knowledge
- Pedagogical knowledge
- Understanding of pupils, including how they learn, the society they are part of, and the issues that shape their world

Of the above elements no single one was seen to stand alone. Rather, there was a recognition that they should be interwoven in thematic-based programs.

In addition, these core elements were, it was agreed, moderated and influenced by wider external forces. These external forces were found to be common to many countries and reflected the international nature of teacher education and the universality of many of the issues (Smyth, 1995). These forces included:

- A focus on demonstrable standards of teacher preparation and competence
- Calls for “accountability,” surveillance, and appraisal of teachers

- Marginalizing teachers
- Low status (and salary) for teachers and, in some countries, very poor teaching conditions

The contexts of the programs would define the priority held by each of the above forces.

The next section of the literature review looks at the general distance delivered pre-service teacher education literature.

### Distance Delivered Pre-Service Teacher Education

#### Introduction

Distance education as a recognized and effective form of teaching has a long history in many countries (Moore & Kearsley, 1996; Robinson, 1997). Distance education can be broadly defined as a form of delivery that allows teaching to occur where the teacher and the learner/s are at a distance from each other or, more specifically, when “Students and teachers are separated by distance and sometimes by time” (Moore & Kearsley, 1996, p.1).

The last few years have seen an increased use of distance education in teacher education (Nielsen, 1997; Robinson, 1997). Distance universities around the world have played a particularly significant role in the delivery of teacher education (Perraton, 1997; Robinson, 1997). Primary teachers form a significant proportion of the students in these universities (Robinson, 1997). An indication of the numbers of teacher education students can be found by looking at courses provided by such

institutions. The ICDL (International Centre for Distance Learning) database, for example, lists a large number of programs from a range of institutions throughout the world that are relevant to primary teachers in developed and developing countries.

While most of the activity has been in in-service programs, there has also been a noticeable move to use distance education in pre-service teacher education programs. It is this phenomenon that is the subject of this dissertation and the particular focus of this section of the literature review.

Through such documents as the Universal Declaration of Human Rights, article 26, (UNESCO, 2000, p.16), education is recognized not only as an enriching experience but as a right for all people. The declaration states that elementary education should be compulsory and available to all children throughout the world. The provision of education internationally has expanded dramatically, with more children at school than ever before and many more countries achieving universal primary education. UNESCO figures show the world total of primary enrolments increasing from 411 million in 1970 to 668 million in 1997 (UNESCO, 2000).

Perraton (1997) indicated that even with such continued growth, some countries—for example South Africa, where there is a year 2015 target—will not be able to meet their target for providing universal primary education. In the UNESCO report referred to above, it was noted that there were still widespread shortages of qualified teachers to meet these increasing enrolments. However, just providing sufficient teachers is not enough. Those responsible for the supply of teachers need to ensure not only that there are sufficient teachers but that they are *well* educated. That provision is a prime focus in this dissertation and reflects values held by the

researcher. This emphasis is not without support. Perraton, (1993) while stressing the need for many more teachers, also observed that quality matters as well as quantity.

As was noted earlier, the need for teachers is further exacerbated in some areas by the spread of AIDS. According to the Chronicle of Higher Education (Bollag, 2001), the United Nations Fund (UNICEF) estimates that in 1999 alone, 860,000 children in sub-Saharan Africa lost their teachers to AIDS. Swaziland estimates that it will have to produce twice as many teachers as usual over the next 17 years just to keep schools staffed at their 1997 level.

#### Meeting Needs Through Distance Delivered Teacher Education

While ensuring that teachers are of high quality must be the first focus of any pre-service teacher education program, it is also necessary to recognize that more teachers are needed if we are to continue the commitment to providing universal education and responding to growth. Perraton (1997) indicated that there are 23.96 million primary (elementary) teachers worldwide. That is an increase of approximately 4 million from 1987 to 1997 and is consistent with the growth in numbers of children attending primary schools, during that decade. For a number of years, teacher education programs in some countries (Tanzania and Zimbabwe are two notable pre-service teacher education examples) have employed distance education in the delivery of teacher education programs. The impetus for distance delivered pre-service teacher education in Tanzania and Zimbabwe was the need to greatly increase the numbers of teachers in a short time. In this effort the two countries were reasonably successful. Perraton, (2000a, p.65) indicated that 37,998,

or 83% of those that enrolled in Tanzania passed the course and 5887 out of 7353, or 80%, passed the Zimbabwean course. Perraton went on to note that these achievements were not made at the expense of quality and that there were no significant differences between the results of the distance students and those of students in teacher preparation courses in conventional colleges. Two more recent examples from university-based programs in a developed country also confirm that distance teacher education students can achieve well. In New Zealand, students from the External Delivery Option of the Bachelor of Education (Teaching) degree at Massey University were found to achieve slightly better grades than their on-campus counterparts (Simpson & Anderson, 1998). At Waikato University, it was found that students in their mixed media program as a group “compared more than favourably with on-campus students” (Campbell, Yates, & McGee, 1998, p. 175).

The preceding examples serve to demonstrate that distance delivered pre-service teacher education can be successfully employed in responding to shortage and that such delivery is able to match the quality of the more traditional face-to-face delivery. However, evidence of success should not be taken as sufficient indication that concern for quality has been addressed. Robinson (2003, p. 208-209) suggests that evidence of quality must come from many sources and perspectives. For her, this means gathering information from: student records; surveys and evaluations; assessment results; feedback and reports; quality assurance systems; course materials and media evaluations; and documentary analysis. Moon and Robinson (Moon & Robinson, 2003, p. 87) had a similar framework for quality assurance in a distance delivered pre-service teacher education program which suggested attention must be

paid to a range of aspects of a course. Those aspects were: admissions; development of course structure; development of materials; tutor and mentor briefing and training; school experience; school reports and tutor marked assignments; final award of qualification; and destinations and end-of-course surveys. This question of quality in distance delivery is further commented on in the section of this review that considers management of distance delivered programs.

Given the rationalization and cost-cutting trends identified earlier in this literature review, administrators and managers of institutions often seek ways to reduce costs. In these circumstances, distance education is often explored as a means of doing this (Prescott, 2000). However, decisions made to adopt distance education purely for economic reasons could easily undermine the record of success that distance education has if administrators and managers neglect any of the complexities of a pre-service teacher education program that have already been identified.

Cost is, however, always a management factor to be considered in any mode of delivery. In addition to identifying the growth in distance delivered teacher education, Perraton (2000a) also analyzed the cost of distance delivered teacher education (in developing countries) and concluded that it is reasonable to say that distance delivered programs will be between one-third and two-thirds the cost of conventional programs. However, he also cautioned that planners should not “stint on field support for students” (Perraton, 2000a, p. 82). Perraton suggested that in spite of distance education’s positive record, it may be the comparative neglect of field experience that has reduced the acceptability of distance delivered teacher education. This is a significant point and one that was explored through the reports of

practice that the programs of distance delivered pre-service teacher education provided. Visser (1994), when considering costs of distance delivered teacher education, discussed economies of scale, noting that high development costs can be mitigated by spreading costs over many students. He also concluded that the unit cost per student comes out very favorably for distance teacher education. Robinson (1997, p. 9), too, indicated that distance delivered teacher education can be cheaper but she qualifies this statement by indicating that there are many factors to consider. For Robinson, these factors include the number and percentage of students successfully completing the course, the type and number of media used, the extent of face-to-face teaching and/or supervised teaching practice, the number of options offered to students, the nature of the subject, whether or not practical work is involved, and the number of cycles over which the program will run. Lockheed and Verspoor (1991) called cost-effectiveness the primary advantage of distance delivered teacher education although they tempered this claim somewhat by acknowledging that, in most cases, large enrolments were a major factor in the cost-effectiveness. They cited examples in Tanzania, Brazil, and Sri Lanka. To further assess the cost-effectiveness of distance delivered pre-service teacher education, information from a wider range of countries is needed—particularly from some of those with tertiary level programs where the new technologies are being used.

Throughout the world, many countries have employed distance education very successfully to deliver in-service programs to teachers already in the field. Although these initiatives are not the focus of this work, they do give further evidence of the ability of distance education to provide teacher education. Distance delivered in-

service teacher education programs have been able to reach large numbers of teachers spread over considerable distances (Lockheed & Verspoor, 1991; Perraton & Potashnik, 1997). Robinson (1997), also focusing on in-service teacher education, noted the advantages of this geographical reach and added that it opens up new access to teacher education in rural areas and for women. She further noted that distance delivered pre-service teacher education has appeal for the students, as it opens up access and allows some flexibility; for educational institutions, as it enables them to extend their outreach; and for governments and international agencies, as they can provide large-scale, and rapid education.

This history of distance delivered teacher education has led those most familiar with the field to conclude that distance education has a good record and is increasingly able to meet needs. Perraton (1997) noted that distance education has established its legitimacy and the role it can play in delivering teacher education and Prescott (2000) concluded that distance delivered teacher education has proved to be an enduring strategy. Moore and Thompson (1997), in a review of literature, provided numerous examples of the effectiveness of distance education in in-service and continuing teacher education. Robinson (1997) agreed with these conclusions and, in addition, noted that the demonstrated capacity of distance education for delivering teacher education suggests it is time to explore new models. In the past, distance education has often been used to solve problems (of access or shortage) yet Robinson suggested that it “offers an opportunity for reconceptualizing teacher education and training in terms of content, methods and delivery, and for reconstructing it in a variety of forms to meet different needs within a country”

(Robinson, 1997, p. 16). She also made strong links to the core elements of pre-service teacher education already identified in this literature review, when she suggested that close links with schools, learning in a social context, and using the specialist knowledge of teacher educators are necessary. However, teacher educators may have to learn how to promote the independent, self-managing models of learning needed in distance education, rather than the transmission models, that according to Robinson, have been used in some teacher education institutions, particularly those of developing countries. Robinson concluded her comment on distance delivered teacher education by indicating it has not yet been fully exploited nor have sufficient models developed. She called for evaluation and research bases to grow alongside new developments.

Significant among the new developments is the use of new computer-based technologies in the delivery of pre-service teacher education. When the Open University (UK) developed a pre-service teacher education program, new computer-based technologies were central to that development (Banks & Burgess, 1996; Bourdillon & Burgess, 1998; Moon, 2000). In New Zealand, two university-based pre-service teacher education programs also incorporated computer technology into the delivery of their programs (Anderson & Simpson, 2000; Campbell et al., 1998). In Australia, interactive computer multimedia was central in delivering a pre-service teacher education program to Aboriginal and Torres Strait Island communities (Henderson & Putt, 1993). The program developers of all these initiatives saw the developments as responding to a mix of pedagogical, equity, and societal issues that reflected those identified earlier in this literature review.

Traditionally, most distance institutions of all types have relied heavily on print media in the delivery of teacher education courses (Robinson, 1997). However, as Robinson also has indicated, a number of other media have been relied on as well: radio has been quite widely used in Nepal for example; audio-teleconferencing has seen more use (in Universities of the West Indies and South Pacific); and many courses include some face-to-face time. While acknowledging that residential time can play an important role Robinson has also cautioned that such time is not always effective unless it is designed to complement the distance study elements of the program.

### Summary

This section of the literature review has provided a picture of how pre-service teacher education can be delivered by distance means. Some of the new directions that may become part of distance delivered pre-service teacher education will be identified after a discussion of the design, delivery, and management considerations associated with distance delivery, which are the subject of the next section of this literature review.

## Distance Education

### Introduction

Moore and Kearsley's (1996) view of distance education as a process that requires a systematic approach, will be explored in this section of the literature review. This approach indicates that it is the systematic and interwoven application

of systems components that distinguishes distance education from other forms of delivery. Therefore when considering the design, delivery, and management of distance delivery, an institution must take account of the interwoven nature of the general structure, features and approaches of a particular program. As Perraton (1991) indicated, a distance delivery institution needs to address both administrative and educational components differently from a conventional institution. The demands of each component need to be understood before the component is incorporated into the whole distance delivery system. In the sections that follow distance delivery systems as a whole will be discussed before the individual components are addressed.

#### General Structures and Features of Program-Focused Distance Education Delivery Systems

The Commonwealth of Learning, which serves as a professional organization for countries from the British Commonwealth that are engaged in distance education, has developed guidelines related to the delivery of distance education programs. Development of these guidelines—resulting from discussion with member institutions throughout the world, the International Council for Distance Education (ICDE), and regional education associations—was prompted by a generally perceived need for guidance due to the “proliferation of electronic delivery methods” (The Commonwealth of Learning, 1997, p. 1), which are recognized by distance education experts as only one method of delivery in a field that has many. The Commonwealth of Learning was also concerned that the benefits for institutions to work together in offering courses to distance students should not be overlooked at this time when

institutional competition is so often promoted. The guidelines “provide a common framework within which individual institutions can work and should help to ensure that students receive a service that is truly beneficial and of high quality” (The Commonwealth of Learning, 1997, p.1). The institutional guidelines call on institutions to focus on their students and to:

- Follow responsible marketing and student-recruitment practices. Within this guideline, there is a call for every effort to be made to ensure access regardless of gender, ethnicity, age, or physical disabilities.
- Offer a course development, review, and revision process that is adequate to maintain quality assurance and ensure that courses are culturally sensitive and appropriate.
- Provide student support—advising, instructing, evaluation and assessment, examinations and protection of privacy.
- Where computer-mediated instruction is used, protect students and institutions regarding the materials produced.
- Ensure that students will be able to complete programs once they have begun—taking care that any changes that must be made to programs should not disadvantage existing students.
- Guard confidentiality of student information.
- Provide appropriate training and professional development, for faculty and staff alike in the areas of electronic delivery and student support

The Commonwealth of Learning guidelines also detail responsibilities to partner institutions. These focus on clear delineation of contracts, protection of intellectual rights, costing, resources, and sharing of information and expertise.

Given the broad consultation involved the Commonwealth of Learning guidelines provide a framework from which to consider the design, delivery, and management components needed in any effective distance delivery system. In turn, these components are shaped by the nature of the distance institution, the particular educational focus valued by the institution, and a reaction to external forces. While many actual operating models are possible, there are key functions that all distance education institutions must develop. Perraton (1998, p. 3) observed that “Effective programmes of open and distance learning require a structure for six functions: materials development and production, distribution, student recruitment, tutoring and counseling, student records, and assessment or accreditation.” While the components are now addressed somewhat individually in the sections that follow, it needs to be stressed again that the processes must be systematically integrated in distance delivery.

#### Components of Distance Education Program Design, Delivery, and Management

Rumble (1986) in his work on planning and managing distance education, discussed three general models of distance delivery - institution centered, person centered, and society centered - that can underpin the delivery approach of any distance education institution. Institution centered models focus on maximizing the effectiveness and efficiency of educational practice. Person centered models place

the main emphasis on individual growth and society centered models on bringing about change.

Another area of focus when considering models of distance delivery has been on transactions. Here, the work of Moore is fundamental (1993). Moore identified transaction as central to distance education. Moore's theory of transactional distance was conceptualized in relation to "Peter's perspective of distance education as a highly structured mechanical system and Wedemeyer's perspective of a more learner-centered, interactive relationship with a tutor" (Moore & Kearsley, 1996, p. 199). Moore theorized that distance education is characterized by a transactional distance between teacher and learner that is a function of dialog and structure. The balance between dialog and structure varies and reflects the level of interaction instructors (and the institution) deem to be pedagogically important. "The nature and extent of the interaction that would be deemed appropriate varies according to the organizational and designer's teaching philosophy, the nature of the subject matter, the maturity of the students, their location, and the media used in the course" (Moore & Kearsley, 1996, p. 11). As a result of Moore's work Verduin and Clark (1991) suggested a further general model which they called transaction centered. This model "requires the adoption of a systems approach in which entities involved in the process cannot be considered in isolation from each other" (p.170).

The accommodation of such a range of models and the structures and features of distance education mentioned earlier led Moore and Kearsley to emphasize the need for a systems approach to distance education delivery. Saba and Shearer (1994) have also acknowledged the need for a systems approach in distance education noting

that no element in distance delivery is in isolation from any other. This interdependence of elements (Moore & Kearsley, 1996) emphasizes that distance delivery requires a total, integrated systematic approach and echoes in some respects Peters' previously mentioned view of distance education as an industrialized process. Perraton, (2000a) mentioned centralization and industrialization in regard to the distance delivery of teacher education: noting that "the strongest case for using distance education in the education of teachers may, in fact, be that it will centralize and industrialize those parts of teacher education for which this is appropriate, and so allow time and resources to be devoted, in greater measure, to interaction and reflection" (p. 83).

Visser (1994) states clearly that "distance education, in order to be effective, requires a sound organizational infrastructure" and that the infrastructure is "essential to manage the different flows of information and to provide support to the learner" (p.6). According to Visser, the infrastructure also supports logistics and administration and the provision of student feedback. Robinson (1997), too, identified the importance of infrastructure, indicating that deficiencies in the infrastructure of distance education have been one reason some primary (elementary) teacher institutions have failed.

Verduin and Clark (1991) concluded that systems must be both supportive and allow independence. "Whatever mode is used to administer and carry out the distance education program, adequate funding, staffing, control, and freedom must be present to ensure a successful effort. Autonomy and authority are critical to the success of distance education programs" (p.195).

There is no one best way to manage distance delivery. There are several types of distance delivery institutions (Moore & Kearsley, 1996; Verduin & Clark, 1991). Although each needs to approach the development of effective management somewhat differently the considerations that follow, which reflect the framework provided by the Commonwealth of Learning in the previous section, will be important for every institution.

The marketing of distance delivered programs and the recruitment of students needs to be linked with questions of access (Perraton & Hulsmann, 1998). Choice of technology can open opportunities for some students but deny opportunities for others. Decisions to move to alternative technologies or to add a further technology need to be carefully weighed by people with detailed knowledge of the student body, because costs and availability of delivery modes may act as a barrier to access for some students. The structure of courses and the sequence of delivery can also have an impact on student success. Students entering a program need to be able to see that a progression to the end point is possible (Perraton & Hulsmann, 1998). Options for transfer or other means of completion that are readily available for on-campus students may not be available for distance students—and program planners often overlook this. If the end point or award of the qualification is linked with another institution, then the question of who will award credit is important. There will have to be consideration of the other institution and policies there (Perraton, 1991). If the distance education institution awards the qualification, then there will be decisions to be made about how the nature of distance delivery may affect the type of assessment tasks that students are asked to undertake. Additionally, in distance delivered

courses, usually because of the lack of face-to-face contact, the question of parity of esteem often arises and needs to be addressed (Perraton, 1991).

Course material provides a very public face for distance education. Although the design of distance education material often involves a team of people there is little support in the literature for a formulaic approach to material production. It is stressed that the material must support specific purposes and specific learners (Calder, 1994; Rowntree, 1994; Thorpe, 1995). Rowntree suggested there are three types of distance learning materials—tell-and-test, tutorial-in-print, and reflective action guides. Designers may use one approach or a combination but should base their decision on an understanding of both the content and learners.

Calder (1994) highlighted the importance of program-level course design decisions, noting that this is the level with major curriculum and course-planning responsibilities. Such decisions ensure programmatic consistency and make sure that themes and values are interwoven through all the component parts.

Program planners in distance delivery must not work in isolation (Visser, 1994), but recognize the larger educational discipline that they are part of. There needs to be acknowledgment of the responsibility to the wider profession to ensure “parity of esteem” (Visser, 1994, p.6) and sustainability for distance education options. All components must interact. Moore and Kearsley (1996) summarized this succinctly: “good quality requires that the development and operation of each component be controlled in such a way that it is fully integrated with the development and operation of all other components, making each supportive of the other” (p.6).

Alongside quality teaching and teaching materials must be a provision for efficient and effective student support, to ensure that students can focus on their studies (Calder, 1994). Student support in distance education is often provided by a combination of specialist administrative services (such as dispatch, work tracking, and library services) and support from academic advisers and instructors. Such support needs to be formally constituted and information about it provided to students. Moore and Kearsley (1996) identified counseling/guidance, administrative assistance, and interaction (with tutor/instructor and other students) as three types of support that distance students need. Tait (1995) noted that the key task in constructing student support services is to acknowledge the identity of the learners, as this complements the mass-produced materials that are necessary in distance education.

The structures of distance education are complex and must manage the flow of information (printing, production, dispatch, etc.), learner support (feedback, liaison people, library links, learning centers etc.) and administration (enrolment, processing, recording and reporting of results, etc.). Decisions about all these aspects of distance delivery require program-level coordination.

So far, this section of the literature review has largely focused on establishing that distance education is characterized by a systematic approach that shapes design, delivery, and management and that distance education has overarching professional organizations committed to guiding the practice, development and research of distance education. The systems nature of distance education delivery has been considered and the key aspects of program delivery explored. That overview

provides a base from which to now consider what new directions might be supporting and promoting the growth of distance delivered pre-service teacher education.

### New Directions

What are some of the new directions in distance delivered pre-service teacher education that might be explored? Given the Commonwealth of Learning's recognition that computer mediated delivery must be considered and used carefully, along with recognition in the literature that computer mediated delivery has potential to support interaction, the most obvious development to ask about is the use of internet-based communication. Internet-based communication brings a new delivery media into the mix that programmers, in distance education can select from. Perraton (1997) and Prescott (2000) indicated that they see internet-based communication as a development worthy of consideration. However, there are cautions.

Moore and Kearsley (1996) cautioned against simply adding a new technology without acknowledging and understanding the complex mix of design, delivery, and management considerations that underpin the delivery of any program. Moore and Thompson (1997) acknowledge that "The evidence that can be gathered from the literature points overwhelmingly to the conclusion that teaching and studying, especially that which uses interactive electronic telecommunications media, is effective when effectiveness is measured by the achievement of learning, by the attitudes of students and teachers, and by the return-on-investment" (p.59). However, Moore and Thompson added, the evidence is largely anecdotal and evaluative.

Mason (1999) observed that technology-mediated distance education has been oversold but will undoubtedly increase in use. However, she also acknowledged that

“there are educational benefits to be gained from telecommunications technologies: wider access, greater flexibility, more engaging learning environments and better communication with other learners and teachers” (p.46). Perraton (1997, p. 14) commented “We are only beginning to learn to use some of these technologies [telecommunications and information technologies] effectively and much remains to be learned. We already know that technology is not a cure-all for the ills of teacher education. However, thoughtfully used, these technologies can introduce many promising improvements over traditional modes of teaching and learning at a distance.” The use of computer-mediated communication in field experience that was noted earlier in this literature review is one concrete example of this.

The introduction of new technologies has led to the suggestion that teaching and delivery of distance programs may be in transition, that a new paradigm may be developing (Palloff & Pratt, 1999; Turoff, 1997). Garrison (1993) regarded communication technologies as heralding a new generation of distance education that could provide new ways of interacting educationally at a distance. Bates (1993) discussed a new technology-based generation of distance education but in doing so linked the established understandings of practice with the new technologies. He suggested that successful distance education institutions will be those that understand the systematic nature of distance education and systematically adapt to and embrace the new technological trends. In addition to the new technologies, Palloff and Pratt (1999) identified two wider trends—greater students diversity and economic factors—as forces in society that are driving the technology changes. It may be a mix of several complex factors that ultimately account for new delivery developments.

Even a development as consequential as the emergence of the new technologies does not stand alone. The trend of an increasing number of adults returning to education has been identified in the earlier section of this literature review. Many of these adult students seek part-time or flexible study options (Tait & Mills, 1999). At the same time, as also indicated earlier, new technologies seem likely to bring changes to distance education institutions. The convergence of these factors is complex but likely to bring together, face-to-face, institutions that adopt the new technologies and distance-teaching institutions that add new technologies to their delivery media (Tait & Mills, 1999). This convergence of distance and face-to-face education will bring increased access to diverse students (Tait & Mills, 1999). Based on the same factors, Daniel (1996, p.8) saw the likelihood of the large open universities emerging into ‘mega-universities.’ and Hanna (2000) the likelihood of institutions being redesigned and forging links and partnerships.

Another possible new direction is the development of consortia—a direction that both reflects the emergence of new technologies and recognizes that different types of institutions have different strengths. The Commonwealth of Learning (COL) guidelines presented earlier indicated that the institutions consulted in their compilation saw consortia as a real possibility. As has already been indicated a range of functions is required to ensure effective distance delivery of programs. Many institutions are able to undertake only some of them. There could be advantages in acknowledging institutional strengths and expertise and building on that. Perraton and Hulsmann (1998, p 27-28) contended that five conditions need to be met for partnerships to have a reasonable chance of success:

1. Clear goals and a clear statement of purpose
2. Significant roles for administrative and academic staff in all member institutions
3. A governance and funding structure that fits the purpose
4. Complementary roles and benefits to all members of a partnership
5. A commitment of resources from all partners

The preceding section has outlined some of the directions that distance education may take, but what, at this point, are some of the particular issues and challenges that can be identified for distance delivered pre-service teacher education?

### Issues and Challenges

When considering the issues and challenges that arise we might ask what are the questions that planners must consider in planning distance education for pre-service teacher education? The move to focus more clearly on pre-service teacher education serves to draw the issues and challenges into the central questions of this dissertation.

Perraton, (1993, p.15) stated that we look at three things: quality (is it any good?), cost, and the conditions of success. Of these, cost has been discussed in the section of this literature review looking at distance delivered pre-service teacher education, so further comment will focus on quality and conditions of success. Perraton (1993) indicated that determining quality is difficult in all teacher education programs. However, he suggested research directions that would provide some indications of quality. Perraton (1993, p. 15) suggested that we need to determine first if pre-service distance education produces “inspiring and imaginative teachers”

and second, if the classroom work of these teachers differs from those educated conventionally. He added that any research would encounter difficulties in acknowledging the differences between on-campus students and distance students, the latter of whom are usually older and often have experience relevant to teaching, such as working as a teacher aide or a parent helper. He stated that there would need to be measures of “internal efficiencies,” (p.16) such as drop-out rates. While Perraton has given this one example of such efficiencies as quality indicators, Robinson’s and Moon and Robinson’s earlier lists suggested additional sources from which evidence of quality may be obtained. Nielsen (1997, p.286) too suggested that the ability of graduates of distance delivered teacher education programs should be judged on their ability to teach well. He saw this ability as being evidenced by being able to create conditions under which students can learn for understanding. In addition, Nielsen stated there is growing consensus that teachers should have a moral purpose, a knowledge base, and practical skills, and that quality can be assessed in terms of a teacher’s ability to display skills in these three areas. Establishment of quality is also linked to external policy. Hon-Chan and Mukherjee (2003, p. 59) suggested that planners of programs of distance delivered pre-service teacher education should ensure that their program is viewed as a regular part of existing teacher education provision and reflects the quality standards set by external bodies. Moon and Robinson (2003) agreed but indicated that there must be links between the national standards and the internal efficiencies to ensure the quality of the teacher graduates from a program. For them, “No matter how far standards are prescribed nationally, distance education programmes have to manage their own internal quality in relation

to learning materials, the learner support system, delivery systems, administration and management, and assessment” (p. 86). National standards for teacher education are now in place in many countries. In New Zealand the standards board, The New Zealand Teachers Council, has developed a set of supplementary standards that institutions who are delivering distance pre-service teacher education are required to meet. These additional standards relate to: program design, development and evaluation; financial and administrative infrastructure; staff selection and development; student selection; appraisal and development; program organization and structure; practical/work based components; resources; and, student guidance and support systems (New Zealand Teachers Council, 2001).

Visser (1994) linked the determination of quality control with good instructional design. He stressed again the point made earlier that once distance materials are developed and delivered to students, they are a very public display of quality. The materials cannot be recalled to correct deficiencies, so for distance education quality control is very front-ended. Program planners must have “sound knowledge of the audience in terms of prerequisite knowledge and skills” (Visser, 1994, p.6). Planners must also consider in what circumstances materials may be used. Distance students usually study from their home base. These aspects of course design are much broader than those confronting face-to-face teachers, who can adjust for and control circumstances, learning environments, and learner responses on a daily basis if necessary.

In seeking evidence of success, both Perraton (2000a) and Robinson (1997) indicated that distance delivered pre-service teacher education needs to develop

sustainability. Perraton noted that programs need to become institutionalized acknowledging that this would be difficult for programs brought into existence under emergency conditions.

Distance delivered pre-service teacher education brings with it one very particular challenge: the field experience. In a sense, this is the one element of a distance delivered program that is not distance, as the students work in schools with others from their profession. However, these students have to receive both preparation and support of their field experience at a distance from their base institution. In considering distance delivered teacher education Perraton (n.d, p. 11) observed: “The first condition is to set in place effective arrangements to support students and, in particular, to supervise their teaching practice.” Robinson (1997, p.5) thought similarly: “The practicum presents distance educators with major logistical problems of organization and development.” Robinson also indicated that consistency of quality in field experience is not easy to achieve for widely geographically dispersed students and that there is the challenge of understanding local school conditions and being responsive from a centralized point of control.

The issues and challenges identified so far are primarily important to program planners, administrators of distance options, and others responsible for day-to-day delivery decisions. However, these people also need to focus on and understand the issues relating to instructors and students involved in distance delivered pre-service teacher education. The skills needed by both students and faculty are in many ways generic skills of teaching and learning. However, the nature of the teaching and learning environment in particular can be quite different from that of face-to-face

classrooms. Each individual, in quite different settings, is usually applying the skills, independently.

Students, especially those new to distance education, need to “acquire the skills and habits of being effective distant learners” (Moore & Kearsley, 1996, p.12). These skills include self-management, self-discipline, and self-motivation (Gibson, 1998). Eastmond (1995) noted that when interactive technologies are used, students have to work collaboratively and interact with other students and with the instructor—but from their individual settings. It is also likely that such learning may call for reflection and sensitivity, again without the cues usually supplied in a face-to-face setting, as well as skills in using the technology.

Not all faculty have distance teaching experience. Faculty need to learn the skills of teaching at a distance, which can include understanding of design and layout, knowing how and when to use visual material, projection of self in other than the face-to-face medium, and greater facilitation and promotion of collaborative learning (Mason, 1999). Moore and Thompson (1997, p. 61) stated that “Training should lead to an understanding of the philosophy, history, and theory of distance education; techniques of course design, including the skills and techniques of producing written, recorded, and teleconference teaching; planning and managing distance education systems at local, state and national levels; techniques of facilitating interaction; research and evaluation techniques; and student support and counseling.” Moore and Thompson (1997, p. 61) also observed that faculty need an attitudinal change to learn that “technology can be a means of enhancing the quality of human interaction that is so important in education.” Tarver and Pollacia (1999) focusing on web-based

delivery stressed that for an online distance education program to be successful teamwork is needed. For them teams need to be led by an administrator who acts to maintain the academic focus while working with technical and support personnel to ensure the smooth delivery of distance programs. While such support allows faculty to focus on their teaching, working in a team is often a new experience for many faculty. Tarver and Pollacia (1999) also indicated that faculty will need to adapt new teaching styles and modify the way they interact with students.

### Conclusions Drawn from the Literature Review

What, then, are the design, delivery, and management issues and challenges associated with the distance delivery of pre-service teacher education programs that have been identified when they are considered alongside the core elements of pre-service teacher education?

First, well-designed, quality pre-service teacher education is usually developed through a programmatic approach that recognizes that all components of the program are interwoven. Interaction and dialog are valued in the delivery of programs and are seen as important in developing a reflective practitioner. Second, new technologies have increased the delivery media options now available. Careful consideration of the match between all distance delivery technologies, including the new ones, and the program content needs to draw on established expertise and experience. Finally, distance delivery adds complexity to pre-service teacher education—a complexity that requires careful systematic management.

## Chapter Three

## METHODOLOGY

## Introduction

This chapter outlines the rationale for choosing a qualitative approach in this dissertation and provides an overview of the procedures adopted. Each step in the research process is identified and discussed. The position of the researcher in the process is identified, and her values and philosophical frameworks made explicit.

## Assumptions and Rationale for a Qualitative Design

This study was a literature-based, international comparative study that investigated a phenomenon within real-life contexts. The phenomenon or object of the study is distance delivered pre-service teacher education. The contexts, although diverse because of their international (multiple) locations, are clearly delineated pre-service teacher education programs. A meta-analysis of the programs provided qualitative data for examination. This examination, along with subsequent analysis and discussion, led the researcher to a deeper understanding and greater knowledge about distance delivered pre-service teacher education. The results of this meta-analysis are presented so that others who seek to provide guidance on good practice in distance delivered pre-service teacher education may find this a source of information.

### Appropriateness of the Method

The method of meta-analysis has a twenty five year history in the field of quantitative research. Glass (1977) introduced the method to the social sciences as a way of statistically combining the results of quantitative studies. The method can be used with a range of methods – survey, co-relational, experimental, quasi-experimental and regression analysis studies. Used in this form, meta-analysis involves the selection of multiple studies on a similar topic and the synthesis of individual data points across those studies. Much has been written about quantitative meta-analysis, both the research process involved and the methodological standards for its use.

A methodological precedent for the synthesis of findings from qualitative studies exists in the form of meta-ethnography (Noblit & Hare, 1988). Noblit and Hare said that meta-ethnography involves “a rigorous procedure for deriving substantive interpretations about any set of ethnographic or interpretive studies” (p. 9). For Noblit and Hare meta-ethnography involves the summary, interpretation, and translation of published studies into each other. Texts must be explored relying on a range of diagrammatic and textual data display techniques to construct interpretations and synthesize understandings from multiple sites. As studies are compared, new interpretations are developed, thus going well beyond what is usually done in a review of the literature.

### Refining and Clarifying the Method

Through the 1980s and 1990s an increased awareness of, and interest in the qualitative tradition within the social sciences, and the area of education in particular, has led to the production of a broad and diverse range of qualitative studies within that field. Because of the difficulty of developing a coherent and credible synthesis of findings from studies that each portray a uniquely interpreted context, such studies have largely stayed in isolation from one-another. Recently attempts have been made to bring such studies together, to develop ways of synthesizing findings, and to develop more informed understandings of the areas that they represent (Eisenhart, 1998). Eisenhart questions the work of Murray and Rath (1996) who had used the analogy of stone walls to describe how a researcher might collect and organize the results of numerous previous studies. Eisenhart says that interpretive studies should “give us stories that startle us with what we have failed to notice about a wall and the possibilities for new thinking that arise from different ways of viewing or using it and its parts” (p. 395).

This study draws on the precedents described above. It follows the path of meta-ethnography in going beyond a review of the literature to the development of new understandings. Using Creswell’s (1998) idea of traditions, the research also draw on studies in any of the five traditions Creswell identifies and, in particular, on guidance provided by research approaches used in multiple case or program studies. As such it goes beyond being meta-ethnography, and becomes qualitative meta-analysis. This approach then allows the examination of ideas, mind-sets, approaches

and programs as well as conclusions reached and findings elaborated in the results of studies (Bair, 1999) in the ways that are described in subsequent sections.

The study of programs can be particularly useful in presenting information about aspects of education where little research exists (Merriam, 1998). In such situations, the work undertaken may form the basis for future comparisons and theory building. Through the rich description that is part of such an approach, it can be possible to build new conceptual categories that may later underpin new theoretical insights.

In this study, examination of the programs of distance delivered pre-service teacher education plays a supporting role in order to facilitate understanding of the broad case. The broad case investigates the phenomenon of distance delivered pre-service teacher education. As Stake (1995, p.436) noted, “Ultimately, we may be interested in a general phenomenon or a population of cases more than in the individual case.” The individual examples of pre-service teacher education are drawn from all parts of the world.

According to Stake (2000, p.437) “Individual cases in the collection may or may not be known in advance to manifest some common characteristic. They may be similar or dissimilar, redundancy and variety each important. They are chosen because it is believed that understanding them will lead to better understanding, perhaps even better theorizing, about a still larger collection of cases.”

The outcome of an in-depth analysis of many cases needs to be a rich description of the particular phenomenon being studied. It is appropriate for a researcher using a descriptive approach to:

- Illustrate the complexities of a situation—the fact that not one but many factors contributed to it.
- Have the advantage of hindsight yet can be relevant in the present.
- Show the influence of personalities on the issue.
- Show the influence of the passage of time on the issue—deadlines, change of legislators, cessation of funding, and so on.
- Include vivid material—quotations, interviews, newspaper articles and so on.
- Obtain information from a wide variety of sources.
- Cover many years and describe how the preceding decades led to a situation.
- Spell out differences of opinion on the issue and suggest how these differences have influenced the result.
- Present information in a wide variety of ways ... and from the viewpoint of different groups. (Merriam, 1998, p. 30-31).

### The Research Process

There are several stages in the research process and in this study the six stages identified by Bassey (1991) were used to guide the work. However, although these stages as set out here follow a clear linear progression, their implementation was not linear.

The first stage was to identify an issue, problem, or hypothesis. For this study, the issue of the distance delivery of pre-service teacher education was identified and a theory-seeking approach to finding an answer was adopted.

Bassey's second research stage involves asking research questions and drawing up ethical guidelines. For this study, a major research question and two supporting questions were developed. This set of questions provided a structure to guide the review and analysis of the programs of distance delivered pre-service teacher education. As with all research, there were also ethical questions to be considered. The researcher completed a Pennsylvania State University course on human ethical concerns in research, and an ethics course in her home university (Massey, New Zealand). In this research, all documents being used were in the public domain; therefore questions of privacy about material were not an issue. However, the researcher was careful to consider fair reporting and interpretation of data in order to minimize misrepresentations and misunderstanding (Stake, 1995). There was also an obligation to see that no harm could come to anyone from the work and to ensure that the outcomes and recommendations were sensitive to the diverse situations this work could be applicable to.

Collecting and storing data is the third research stage suggested by Bassey. Case-based research adopts an eclectic approach to data collection. Data collection was ongoing throughout this work and drew on many sources. Case-based research does not specify or "claim any particular methods for data collection or data analysis" (Merriam, 1998, p. 28). Morgan (1991) supported this point saying, "A case study may employ a wide range of research methodologies, in fact, any technique which

seems likely to generate insights into the research questions under investigation (p.1).

In a similar vein, Stake commented “by whatever methods, we choose to study the case” (2000, p. 435). The collected data were stored in a country-based reference system as it was returned to many times during the research process.

In this study, data were gathered through searches of library catalogues and databases (including dissertation databases) at The Pennsylvania State University, Massey University and through online searches of electronic databases at major open/distance universities throughout the world, wherever such databases were accessible and language was not a barrier. Electronic searches were conducted on websites of major distance organizations such as the Commonwealth of Learning, ICDE (International Centre for Distance Learning) and major aid agencies such as UNESCO and the Worldbank who fund and report on many distance delivered pre-service teacher education programs. Where they existed, the websites of the institutions where programs of distance delivered pre-service teacher education was offered were accessed. The major distance and teacher education journals were searched, as were conference proceedings from the major distance and teacher education conferences. The references of all articles found were studied for further sources of data and procurement of those was pursued through interloan facilities. Personal communication with people in the field also provided some information about other sources of data. The search process strove to recognize the diversity of settings in which the identified issues and challenges were being addressed. This was important, as it is through knowledge of other approaches that deeper insights are gained (West, Jarchow, & Quisenberry, 1996). Additionally, it is essential to

recognize that much interesting and relevant work is being undertaken in both industrialized and non-industrialized countries, English speaking and non-English speaking (Zeichner, 1999).

Generating and testing analytical categories, the fourth research stage, involved analysis at increasingly complex levels. At each level, coding categories that were developed were tested against the data. This was a process of extension and bridging and continued until the categories developed were saturated and new sources led to redundancy (Patton, 1990, p. 404). This process of categorization was one area where the understandings held by the researcher were also drawn on (Stake, 1995). Use was made of NVivo software. NVivo is a program designed to facilitate the analysis of qualitative data and provides a range of tools for managing rich data. As the data were coded using the NVivo software the initial broad categories became tree nodes and were then further broken down into sibling nodes. NVivo also allows multiple levels of coding, browsing of data and the production of a range of reports. “NVivo has tools for recording and linking ideas in many ways, and for searching and exploring the patterns of data and ideas” (Richards, 2000, p.4). Such capabilities were particularly useful when many programs needed to be compared and analyzed.

Presenting, interpreting and explaining the analysis, the fifth research stage, was necessary before some empirical statement about the findings could be made. In doing this the theory and literature from the fields of distance education and pre-service teacher education were returned to as a guide for explanations. Through the interpretation and analysis processes the researcher sought to develop new

perspectives and identify good practice that will be of practical interest to those engaged in the distance delivery of pre-service teacher education.

As a supervised piece of work, this study also had elements of audit built into it. In addition to the supervision a colleague was asked to read the report and to use a range of key questions to check the main claims and analysis of the data. These questions are detailed in Appendix A.

The final stage of the research process was writing up the research and beginning to disseminate the findings through the writing of journal articles and conference presentations.

### The Role of the Researcher

No researcher enters the field without a basic set of assumptions and beliefs that guide their endeavors (Creswell, 1998). While acknowledging this, it is also noted that in case-based work it is appropriate for researchers to draw on their own experience and background (Stake, 1995).

Analytical researchers play several different roles during the research. In this study, the researcher was an evaluator, an interpreter, and could also be a theorist.

The section that follows aims to make explicit the assumptions, values, and beliefs the researcher brought into this study.

### Positionality and Philosophical Framework

The researcher brought to this study a strong background in primary school teaching, teacher education (pre-service and in-service) and distance education. This background experience includes 18 years of teaching in primary schools and 14 years

working as a distance educator in teacher education. Initially the teacher education experience was with teachers who were already qualified but were adding to their qualifications. These were experienced students, but their study experience may not have included distance education. While working in this field, the researcher taught at a distance, designed and wrote distance materials and, for three years, administered a national distance delivery unit. In the four years preceding this study the researcher co-directed the development and implementation of a distance delivered pre-service teacher education degree program and taught a core course within the program. The students in this program were often new to study in general and distance study in particular. They were somewhat unique in that their program of study meant that they became full-time distance students for three years. The distance delivery of the pre-service teacher education degree required an understanding of the systemic nature of program delivery. A range of media was used in the delivery including Web conferencing software.

The researcher believes that teacher education is important in producing quality teachers. She believes teachers are crucial in classrooms and can—when given opportunity and encouragement to question society's assumptions and values and to reflect on their own practice—make a positive difference for students. She feels being a teacher is one of the most important roles in society although she believes teachers are often undervalued and vulnerable to criticism from many quarters.

The researcher uses the term teacher education deliberately and carefully, rather than the term teacher training. Education, for her, is an ongoing journey and a

process that develops potential. She considers educated people make a contribution to their wider society and to the world. Teacher education, in the researcher's opinion, should be a liberating, challenging, and thought-provoking process. It should encourage and support students to question their beliefs and to continue their personal development.

The researcher also supports the concept of education as a right. She believes this is important at all levels of development, but especially so for children, who are the group most vulnerable to having their rights taken away. However, education can be denied to adults as well. She has seen that many potential students have been unable to access teacher education programs and she believes that distance delivered teacher education has the potential to enable access for geographically isolated students while maintaining the quality of delivery necessary to produce good teachers. Doing this, however, presents challenges, but not to do it well is to deny children their right to a quality education.

During many years spent in the teaching profession, the researcher has seen teaching become increasingly complex and demanding. Teacher education programs have to prepare teachers for a complex, challenging and changing world. The literature reviewed in this dissertation indicates program elements that allow teacher education programs to meet this challenge.

For all of the reasons outlined, it is important to offer the best possible teacher education programs and to attract quality students. This illustrates one of the issues and challenges that face distance delivered pre-service teacher education.

This set of beliefs reflects the researcher's critical/feminist perspectives. However, this study was not positioned within a particular theoretical framework. Rather a descriptive, issue-oriented approach was taken.

#### Data Collection, Procedures, Sources of Information, and Selection of Programs

Individual programs of distance delivered pre-service teacher education were drawn from the literature. Literature and web searches, following the procedures already outlined, identified documents that provided the bulk of the data for the research. Some additional material was obtained through contacts with authors and contact people at institutions. This process meant that rather than any programs being put aside because of minimal information or reference to them, the researcher pursued further information on identified programs and used the steps outlined below to verify and check the data obtained. In a few cases nothing more than reference to a program could be found. Where this occurred this is noted in the introduction to the cases in Chapter 4.

It is particularly important in a study such as this, where document analysis is central, to consider the trustworthiness of the data sources. General guidance on procedures for considering trustworthiness was found in the literature related to critically analyzing information sources. Guidelines to doctoral students at Cornell University (n.d.) provided two levels of analysis – an initial appraisal and a content analysis. At the initial appraisal, the guidelines suggested looking at:

- the author, to note the authors' credentials, their institutional affiliations, educational background, past writings or experience, and to check that the writing is on a topic in the author's area of expertise

- the date of publication, to note if the material is current—always allowing that some earlier publications may be considered seminal work in the area
- the edition or revision, as this can help to gauge whether a work has become a standard and is reliable; web sources should also indicate publication and revision dates
- the publisher, as work published by a university press is likely to be scholarly; although the reputation of the publisher does not guarantee quality, it does indicate whether the publisher has a high regard for the source being published
- any journal source, to see if it is a scholarly source

At the second, deeper level of content analysis, the guidelines suggested moving to a more thorough examination of the material by reading the preface to determine the author's intentions, scanning the table of contents and the index to get a broad overview, noting whether bibliographies were included, and reading the chapters that specifically addressed the researcher's area of interest. Both these levels of analysis were followed and, in addition, a range of questions, based on Cornell's guidelines, were asked in five key areas:

- Intended audience—what type of audience and does the material match that?
- Objective reasoning—is the information fact, opinion, propaganda? Is the information valid and well researched? Are the ideas and

arguments more or less in line with other works on the same topic? Is the author's point of view objective and impartial?

- Coverage—does the work update other sources? Is the material primary or secondary in nature?
- Writing style—is the publication organized logically? Are the main points clearly presented? Is it easy to read and the argument clear and not repetitive?
- Evaluative reviews—is the material considered to be a valuable contribution to the field? Is there a measure of agreement among several reviewers on its value?

Tuchman's (1998) guidance for evaluating literature sources also provided general confirmation for the approach suggested by Cornell University. Tuchman suggested that, when using books and articles, selection may be made on the basis of scholarship: "One must discover whether the scholarship meets acceptable standards" (Tuchman, 1998, p. 251). Tuchman suggested that establishing acceptable standards could be achieved by:

- checking to see if sources are frequently cited
- asking if other scholars accept the argument or case
- checking, for example, that the material was well received when published.

The literature on case-based research provided some more specific guidance that was followed when a selection of the actual documented programs needed to be made. Stake (1995) said: "[lean] toward those cases that seem to offer *opportunity to*

*learn*” (Stake, 1995, p.101. italics in original). Stake added “Potential for learning is a different and somewhat superior criterion to representativeness. Often it is better to learn a lot from an atypical case than a little from a magnificently typical case” (Stake, 1995, p. 101).

The literature review provided a conceptual framework for the analysis of the programs identified. Searches for programs continued throughout the analysis phase of the research process reflecting advice Yin (1994) gave that noted that in multiple case research if the cases are subtly different or if a high degree of certainty is sought about the outcomes, then using many cases is appropriate. Yin also advised that when external conditions (such as in this study locations in different countries or cultures) produce variation, it is wise to have multiple cases as this produces more certainty about conclusions that may be reached.

The programs provided material for the development of a theoretical framework relating to the distance delivery of pre-service teacher education. The framework states the conditions under which particular judgments about the distance delivery of pre-service teacher education would be made. Thus, this work could be said to be theory seeking (Bassegy, 1991). For any theory developed to be regarded as sound, there must be a sufficient number of cases to allow significant features to emerge, to make interpretations plausible, to engender trustworthiness, and to provide a base for construction of a worthwhile argument.

#### Methods for Verification

Literature-based work requires extensive verification (Creswell, 1998; Stake, 1995). In work such as this which drew on a wide range of documents, it was

important to draw from reputable sources. If the researcher had any doubt about the quality of any source, the guidelines for assessing the quality of literature already outlined were used in conjunction with triangulation or convergence of information to provide a means of confirmation.

### Saturation and Redundancy

In a study such as this where substantial amounts of literature have to be gathered, analyzed and integrated, a key research task is acknowledging the point where additional material would not add to the research. This point was identified in the research literature as the point of saturation (Creswell, 1998; Strauss & Corbin, 1998). For Strauss and Corbin “saturation is more a matter of reaching the point in the research where collecting additional data seems counterproductive; the “new” that is uncovered does not add that much more to the explanation at the time” (p. 136). Bogdan and Biklen also talk of data saturation and indicate that this is the point “where the information you get becomes redundant” (1999, p. 62). Using the guidance provided by the above researchers the concept of saturation was applied in this research.

### Summary

This chapter provided both the rationale for the choice of research approach and an overview of the plan and the research processes that guided the study undertaken. It also attempted to make clear the philosophical stance of the researcher.

## Chapter Four

### RESULTS

#### General Introduction

As stated in Chapter 1, the study reported on here examined programs of distance delivered pre-service teacher education in order to: identify the issues and challenges faced in distance delivery; to identify how those issues and challenges were addressed; and, to seek from the responses good practice for the design, delivery and management of distance delivered pre-service teacher education. The first two points relating to the identification and addressing of issues and challenges are the focus of this chapter. The determination of good practice is addressed in Chapter 5.

This chapter is organized into two major sections. The first section introduces the identified programs of distance delivered pre-service teacher education and, in particular the twenty-one programs of distance delivered pre-service teacher education that were ultimately selected for analysis. The second section presents the design, delivery and management issues and challenges that were identified from the programs of distance delivered pre-service teacher education and outlines responses to these identified issues and challenges.

#### Introduction to the Selected Programs

The programs of distance delivered pre-service teacher education that were selected and then analyzed were found through: an intensive search of the literature; by following up references to other published material; and, by contacting people

identified as key personnel in programs. This process has been described in detail in Chapter 3.

A short overview, using each of the major geographic regions of the world as a framework, follows. The overview provides a picture of the variety amongst programs that were identified. In this overview reference is made to more programs than were finally selected for this study. Reasons for inclusion or not are noted in the general introduction to the programs. Selection reflects a number of factors: the contribution the case could make to the core objective of this study – that is, being able to discern lessons for good practice; the need for sufficient information to provide detail; and, a clear indication that the case did offer the first or initial primary teacher education for the students.

Each broad geographical area of the world was explored for programs of distance delivered pre-service teacher education and most areas are represented in the programs finally selected. The programs come from both developed and developing countries. A short overview of each of the broad geographical areas and their known distance delivered pre-service teacher education programs is presented here.

### Africa

It is in Africa that the largest number of distance delivered pre-service teacher education programs is found. As Adekanmbi (1999, p. 3) pointed out “It would appear that indeed, no other application of distance education in Africa could be considered to be greater than its use for teacher training.” However, the number of programs that allow enrolment of students who are not yet working as teachers or those who are teaching but are receiving their first or initial pre-service teacher

education is relatively small. Most programs actually work with students in an in-service model.

Most African examples of distance delivered pre-service teacher education were developed in response to government policy to introduce universal primary level education – ZINTEC in Zimbabwe and the Tanzanian program are notable examples (Adekanmbi, 1999).

Africa also has a legacy of issues such as colonialism, racism and poverty. These factors have led to many sections of the population being poorly served by past education policies and practices (Zindi & Aucoin, 1995). Efforts to address these shortcomings are reflected in several of the programs.

### Kenya

Distance delivery of programs for teachers has been used for over thirty years in Kenya. The first distance delivered courses for untrained primary teachers were delivered in 1969 (Kinyanjui, 1992). The courses continued until 1977, were suspended, and then revived in 1982. In the face of increases in the number of schools and pupils the total number of untrained teachers has remained constant at around 30% of the total teaching force. The need for distance delivered programs for untrained primary teachers is likely to continue for some time (Kinyanjui, 1992, p. 117). The case selected for this study comes from the Kenya Institute of Education and the University of Nairobi (Bagwandeem, 1997; Kinyanjui, 1992; Makau, 1993; Otiende, 1998; University of Nairobi, 2002). The institute that works with the university provides distance delivered education for primary school teachers with no qualifications, and teacher trainees.

### Nigeria

Nigeria introduced universal primary education in 1976. The total number of teachers in the primary schools in 1977 was 256,990 but 146,563 were below the Grade II certificate minimum standard. Reaching the projected target of 660,000 teachers by the year 2000, most of whom will be holders of the Nigerian Certificate of Education, became the (primary) teacher education focus (Aderinoye, 1995). Nigeria has had a number of distance delivered teacher education initiatives but the most successful institution has been the National Teachers Institute (NTI), (The Commonwealth of Learning, 1994) which was established in 1978 and had by 1990 produced over 510,000 students (Aderinoye, 1995). The NTI, which was selected as a case for this study, teaches the Nigerian Certificate of Education. It is envisaged that upgrading and the consequent development and offering (by distance) of higher teacher education qualifications will be a continual process until teachers have degree level distance options available (Aderinoye, 1995). The University of Ibadan, the University of Abuja and the University of Nigeria have established diploma and BEd degree programs that reflect the beginnings of this further upgrading process. The data on Nigeria came from ICDL information (International Centre for Distance Learning, n.d).

### Somalia

Somalia has some history of distance education through secondary school level education, non-formal education campaigns and training programs offered through the Ministry of Education. Education coverage is, however, low in Somalia and it is envisaged that even universal primary education will not be achieved for

some time (Said, 1990). The program from the Institute of In-service Teacher Training (IITT), was selected for this study. It targets a very particular section of the population - refugees- and the program is not, as yet, widely available. It was reported on at an ICDE (International Council for Distance Education) conference (Said, 1990).

### South Africa

In 1995 a national Teacher Education Audit was undertaken in South Africa and a comprehensive report of the audit was published in 1996. In the introduction to the report it is stressed that judgments about distance delivered teacher education must be set in the context of South African society and global trends in education, technology and society (South African Institute for Distance Education, 1996c).

Most distance teacher education students in South Africa are in-service, mainly studying to upgrade and most are primary level (South African Institute for Distance Education, 1996c). However, in South Africa in 1995 there were 12,614 pre-service students (who were not practicing teachers) enrolled in distance delivered pre-service teacher education programs (South African Institute for Distance Education, 1996c). A diverse range of institutions offers teacher education to this group of students. The development of programs is seen as “uncontrolled” (South African Institute for Distance Education, 1996c, p.vi) and many programs produce teachers in areas of low priority and lack robust quality assurance and accreditation.

The analysis undertaken in Chapters Two to Five [of the audit report] has demonstrated that the system of teacher education offered at a distance is characterized by low quality, fragmentation, massive inefficiencies, and rapid

expansion. In crude but nevertheless realistic terms, vast numbers of students are currently engaged in studies which will, in all likelihood, have little or no impact (even possibly a negative impact) on their teaching practice. (South African Institute for Distance Education, 1996c, p. 97).

There are 20 organizations in South Africa offering distance delivered pre-service teacher education courses, some public and some private. However, there appear to be only four institutions that offer accredited distance delivered pre-service teacher education programs – Bureau for In-Service Teacher Development (BITED) at Johannesburg College of Education, College for Continuing Education (CCE), College of Education of South Africa (CESA) and Lyceum College (in partnership with the Rand Afrikaans University) (South African Institute for Distance Education, 1996c).

The audit report noted that the University of South Africa (UNISA), which is the major recognized distance provider in South Africa, participated only in the training of teachers for secondary schools and pre-primary schools and not for primary schools, although the faculty was in the process of developing programs for primary school teachers.

In February 2001 the South African Ministry of Education issued a national plan for higher education. The plan noted that the “role and function of distance education in higher education is rapidly changing and the traditional distinction between contact and distance institutions and modes of delivery is becoming increasingly blurred” (South African Ministry of Education, 2001, section 4.4). The report noted rapid expansion in distance education programs due to changes in

information and communications technology, need for greater cost-efficiency, increased competition, and the need for recognition of the crucial role distance education could play in meeting the challenge to expand access, increase student diversity and enhance quality. The national plan also noted that many uncritical and market driven initiatives had resulted in poor quality courses and a lack of planned efficient provision. For a short period the Ministry of Education placed a moratorium on the introduction of new distance education programs in contact institutions. In the 2001 plan for higher education the Ministry of Education agreed to lift the moratorium. However, any distance education initiatives in contact institutions would not be funded unless the programs have been approved as part of the institution's three year plan (Section 4.4.1). In addition, the Ministry of Education has proposed the establishment of a single dedicated distance education institution through merging UNISA, Technikon South Africa and the distance education centre at Vista University (Section 4.5).

This rapidly changing South African education environment has made access to case material for this study somewhat difficult to obtain. However, the audit report from the South African Institute of Distance Education did give some well researched details on the four earlier mentioned accredited providers of pre-service teacher education (South African Institute for Distance Education, 1996c). Of the four the information on The College of Education in South Africa and The College for Continuing Education was selected for use in this study as these two institutions had a particular focus on students undertaking initial teacher education. The College of Education of South Africa had 11,664 such students.

### Sudan

The program of distance delivered pre-service teacher education from Sudan that was selected for this study, is an example of an NGO (Non Government Organization) established 17 years ago that has developed partnerships which have allowed the delivery of a range of educational programs and thus provides a somewhat different model from other cases used in this study. The distance delivered pre-service teacher education program, known as the Teacher Assistance Course (TAC) started in 1989. Initially the program was targeted at untrained voluntary teachers in refugee and displaced populations and was delivered in English. In 1996, following the earlier suspension of government teacher education institutions the program began to attract a more general Sudanese group. It was then also translated into Arabic. The data came from a journal article (Homeidan, Jok, Komi, & Wrightson, 2000).

### Tanzania

Tanzania has looked upon education as one of the most important instruments for development (Chale, 1993; Zindi & Aucoin, 1995). Having gained independence in 1961 universal primary education gradually became a focus, particularly during the 1970's. Universal primary education meant expanding primary schooling from 47 per cent of the age group to 100 percent between 1974 and 1977 (Chale, 1993, p. 22). The demand for teachers could not be met through traditional teacher education programs. The Tanzania government decided to use distance education to expand the supply of primary-school teachers (Chale, 1993). Tanzania had experience in distance delivered co-operative education and used this experience to launch its

distance delivered teacher education program. The Tanzanian mass educational programs had used rural newspapers, posters, printed reading texts, village libraries, mobile cinema vans, study groups and radio broadcasts (Chale, 1993). The distance delivered teacher education case used in this study, the village based Distance Teacher Training Program, is one of the largest and most successful distance delivered pre-service teacher education programs that has been undertaken in Africa. Although it has now been superseded by the work of the Tanzania Open University, which was established in 1992 and became operational in 1993, the reports, which include a doctoral dissertation, (Chale, 1993; Wort, 1997) on the Distance Teacher Training Program case provided rich data.

### Uganda

Uganda achieved independence from Britain in 1962 but has, for many of the years since then, been characterized by successive waves of political instability, civil war and hardship (Wrightson, 1998a). Thus the present government is faced with many difficulties which include scarce resources, a low income economy and an AIDS rate of over 20%. The education system is also affected by resource problems compounded by an exodus of educated staff (Wrightson, 1998a). In 1997 the Ugandan government introduced universal primary education. However, in some of the remote areas as many as 80% of the teachers are untrained. Some schools have no trained teachers at all and improvement in the overall situation is not imminent. In 1998 Uganda had more untrained teachers than it did 20 years earlier (Wrightson, 1998a).

As part of a World Bank funded reconstruction project for Northern Uganda the Northern Integrated Teacher Education Project (NITEP) was introduced to provide teacher education for untrained teachers who had not had any access to teacher education nor could they afford the loss of income to attend the traditional two year residential teacher education course (Wrightson, 1998b). In addition, the existing colleges could not cope with further numbers of students and the schools could not release the untrained teachers as there were no replacement teachers.

The work of NITEP has been well documented (Wrightson, 1998a, 1998b) and was selected as a source of data for this study.

### Zimbabwe

In 1980, after 90 years of colonial rule which had been characterized by a systematic neglect of educational provision for the majority of the population, Zimbabwe became independent (Gatawa, 1990, p. 100). The Government of Zimbabwe declared education a right for all citizens (Gatawa, 1990; Zindi & Aucoin, 1995). Education provision expanded rapidly. In just over a year after independence the number of schools doubled and enrolment trebled (Gatawa, 1990). This led to a high demand for teachers. To meet the demand schools employed untrained teachers. As a response to the use of untrained teachers and to alleviate teacher shortage the ZINTEC program (Zimbabwe Integrated National Teacher Education Course), which is a case for this study, was designed (Zindi & Aucoin, 1995). The success of the program led to many of its innovations being applied to the more traditional forms of teacher education (Zindi & Aucoin, 1995). Several sources of data, including a

doctoral dissertation, were available for study (Chivore, 1992, 1993, n.d; Gatawa, 1990; Zindi & Aucoin, 1995; Zvacek, 1989, 1990).

## Asia

### China

There has been extensive use of radio and television in China as a mode of delivery particularly through the Chinese Central Radio and TV University (CCRTYU). Reference was found to the delivery of teacher education programs but no actual case was located even although the data gathering process outlined in chapter 3 was followed.

### India

India has one National Open University – Indira Ghandi, nine state open universities and more than 60 institutes of correspondence (Sharma, 2001). Although pre-service teacher education is offered by distance in India the programs from the open universities focus on certification for secondary and tertiary level teaching. Again, the data gathering process plus personal communication with an Indian academic working in the field of teacher education yielded no actual case study example of distance delivered pre-service teacher education.

### Pakistan

Pakistan has a large Open University – Allama Iqbal. Teachers form a substantial number of the students at the University but are mainly undertaking in-service study. The Primary Teachers Certificate program is a pre-service qualification that is offered and a small amount of detail about this program was

available through the ICDL (International Council of Distance Learning) database and is used in this study.

### Sri Lanka

Sri Lanka has a well-structured school system and a literacy rate of 90 percent (Dharmadasa, 1996). Most teachers have completed training and there is on-going support for their professional development. Distance education is used at all levels of teacher education. The case that was used in this study is offered through the Department of Distance Education under the umbrella of the National Institute of Education. Completion of the program leads to a Trained Teachers' Certificate. In Sri Lanka, distance delivery of pre-service teacher education sits alongside traditional face-to-face delivery as one of several options available. The data came from published papers and a UNESCO report (Dharmadasa, 1996; Tatto & Kularatna, 1993; UNESCO Principal Regional Office for Asia and the Pacific, 1990).

### Thailand

The In-service Teacher Training Division (ISTTD) provides most teacher education at the basic level and it is their program that is used as a case in this study. The information analyzed was available through a UNESCO report (UNESCO, 2000). The Sukhothai Thammathirat Open University offers university level teaching qualifications and the focus from that institution is on in-service programs so none of their programs were included in this study.

## Europe

### England

The establishment of the Open University saw distance education become one of the options open to teachers when they considered how they might undertake professional development. When the Open University later offered pre-service teacher education there was already acceptance of distance delivery within the profession. Teacher education reforms introduced a competency based approach to teaching which was incorporated into the Open University's course design for the Post-Graduate Certificate in Education. The Post-Graduate Certificate in Education targets university graduates who wish to become teachers. This program has recently been reviewed and more extensive use of computer-mediated communication has been incorporated into the new initiative. The new initiative no longer offers a primary pre-service option. It is the original program that is reported on in this study. The data were drawn from papers written by faculty (Banks & Burgess, 1996; Bourdillon & Burgess, 1998; Leach & Swarbrick, 1996; Moon, 1996, 2000; Selinger, 1996).

## North America

### Canada

In Labrador Memorial University of Newfoundland offers a pre-service teacher education course to seven isolated native communities. The program which is known as the Teacher Education Program in Labrador (TEPL) was approved by the university senate in 1978 and has been running ever since (Sharpe, 1992). It is an

example of a current equity focused initiative and is another of the programs analyzed in this study.

#### United States of America

One case of a distance delivered pre-service teacher education program being was found in the United States of America. That was the CalStateTEACH program whose website provided extensive data that was analyzed for this study (California State University, 2002a, 2002b).

#### South America

##### Guyana

The Guyanan case, Guyana In-Service Distance Education (GUIDE), was developed in 1995. It is part of the government's commitment to providing quality basic education. The initial focus of this initiative was to increase teacher competence at the lower secondary level in English, Mathematics and Science. However, the program is now open to teachers in some primary schools as well and for this reason was included in this study. The data available was very recently published in a recognized journal and provided a contemporary view of issues and challenges in a developing country (Thomas, 2000).

#### The Middle East

##### Israel

Teachers constitute a special target population for the Open University of Israel. Teachers have always been well represented in the student numbers. Currently there are moves to 'academize' teaching and the Open University of Israel

is partnering with some of the teacher training colleges to work towards this end. This development provided some illustration of issues surrounding parity and the moves towards lengthening of initial teaching qualifications. The program was selected for this study. The data came from a journal article (Guri-Rozenbilt, 1992).

### The Pacific Islands/Australia and New Zealand

#### Australia

Australia has a well established and comprehensive system of distance delivered education at all levels. Teaching is a degreed profession. RATEP (Remote Area Teacher Programme) is an example of a targeted program driven by concerns for equity. It is a four level option that builds from a one year certificate of Community Teaching to an Associate Diploma of Education, then a Diploma of Teaching and finally a Bachelor of Education. The RATEP program is a joint initiative from the Cairns College of Technical and Further Education, James Cook University of North Queensland and the Queensland Department of Education. Official publications from James Cook University and journal articles provided data on this option which was selected for this study. (Henderson & Putt, 1993; James Cook University, n.d-a, n.d-b; Open Learning Technology Corporation Limited, 1995; York & Henderson, 2001a).

#### New Zealand

Primary school teaching in New Zealand is becoming a degreed profession. There are national standards for registration as a teacher and on-going professional development is required to be undertaken by all teachers.

There is a strong history of distance education in New Zealand. Government initiatives saw specialist distance institutions established for the school, polytechnic and university sectors. One outcome of this was that distance delivered teacher in-service education became well accepted. Delivery of pre-service teacher education by distance means is, however, a new initiative and is an outcome of major restructuring of education in New Zealand. Since that restructuring, which allowed institutions to set their own directions, three of the traditional providers of teacher education now offer primary pre-service teacher education programs at a distance. The pre-service teacher education programs from these three providers were selected for this study. One of those providers, Massey University, is a traditional provider of distance education. The Massey University program, which is a three year Bachelor of Education(Teaching) degree is known as the External Delivery Option (EDO). Data on this option came from a range of published papers (Anderson, 1998; Anderson & Simpson, 1997, 1998, 2000, 2002; Broadley, 2000; Simpson, 2002; Simpson & Anderson, 1997, 1998; Wickham, 2001). The other two providers, Waikato University and Christchurch College of Education, are new to distance education. The Waikato University program is known as the Mixed Mode Programme (MMP) and is a three year Bachelor of Teaching degree. The data on this program came from a range of published papers (Campbell & McGee, 2000; Campbell, McGee, & Yates, 2000; Campbell et al., 1998; Hall, 1998; Hall & Marrett, 1996; McGee & Yates, 2000; Yates, 2000; Yates, McGee, & Campbell, 2001; Yates, 1996). The Christchurch College of Education program is a three year Bachelor of Teaching and Learning degree and the program is known as POLO(Primary Open

Learning Option). A published paper and the College website provided data (Christchurch College of Education, n.d; Delany & Wenmoth, 2001).

### The Pacific Islands

Although distance delivered in-service teacher education is common for teachers in the Pacific islands no specific examples of distance delivered pre-service teacher education were found.

Appendix B provides an overview of the programs of distance delivered pre-service teacher education that provided the data that is now presented.

## Issues and Challenges Identified

### Introduction

In this study of distance delivered pre-service teacher education identification of the issues and challenges came from repeated reading of the literature on the programs. This reading represents the first level of analysis applied to the data. The issues and challenges identified reflect many of the design, delivery and management considerations identified earlier in this study as inherent in distance delivery. They also reflect some of the issues and challenges that were acknowledged in the teacher education literature.

Once the issues and challenges had been identified they were placed into broad categories. These categories related to: students; tutors; material; geographical factors; systemic support; institutional support; evaluation and assessment; assignments; quality; national support; economies of scale; field experience; selection of students; parity of qualification; political policies and support; facilities; teaching;

and, staff development. A second level of analysis then identified smaller subcategories. A full list of the categories and subcategories developed is in Appendix C.

The reporting of data in the section that follows reflects, but does not mirror, the category/subcategory framework. It begins with a focus on the students as there was considerable reporting on student related matters and it is a category that naturally opens the categories that follow. Even so, although discrete categories are used in the reporting there is considerable overlap between the sections, reflecting in itself the interwoven and systemic nature of distance education reported in the literature.

In the remainder of this chapter where an abbreviation for a program name is known it has been used in the text. Where no abbreviation is known the full name of the program is used and the country indicated. A full set of program names and abbreviations can be found in Appendix D.

### Student Support

The type of support that students in the distance delivered pre-service teacher education programs needed, and received, was multi-leveled. Meeting the issues and challenges that providing support brought meant support was built into many aspects of programs and this will be seen as the categories are reported on. The literature had suggested that support should allow students to: develop an identity; focus on their studies; seek academic counseling and guidance; interact with tutors and students; and, receive feedback on their assigned work. In addition, student support was also linked with efficient administrative structures for dispatching material, providing

library services and tracking work. The administrative aspects of support will be reported on in later sections of this chapter.

#### Developing a sense of belonging

Support can engender a feeling of belonging that then builds motivation and helps to ensure achievement. Developing such an atmosphere at a distance and through distance means is a challenge. In many programs high levels of support had been built in. In the MMP, it was noted “It seems that the retention rate and high level of academic success are strong indicators of the effectiveness of support systems” (Yates, 2000, p.8). In the EDO support was also recognized as a key to success. “EDO dropout rates have been no greater than for on-campus students. This is attributed to both the nature of the student group and the support provided by EDO coordinators and staff” (Anderson & Simpson, 2002, p.12). In the OU (UK) PGCE it was indicated that the program, through all its elements must build a safe climate of support that allows and encourages challenge for professional growth (Bourdillon & Burgess, 1998, p. 2). The focus on student growth was echoed in the EDO program. “A prime consideration when developing support structures was an emphasis on good instructional design and teaching rather than on technology” (Simpson & Anderson, 1998, p. 2). In programs with fewer resources support was still seen as central. In NITEP an aim of the program was to create a ‘culture of care’ to support the students. This culture of care was regarded as a fundamental strength of the project which provided “a clear demonstration that an effective student support system is possible even under the most adverse circumstances and that it produces results” (Wrightson, 1998a, p. 7).

The concept of care was echoed in other programs. In the KIE such care was regarded as professional support and seen as a means to sustain motivation and improve professional commitment (Kinyanjui, 1992, p. 121). Building a sense of community was another way a culture of care was developed. In the EDO there were institutional and program level means of developing community through formal learning support programs (Anderson & Simpson, 2002, p. 13-14). The co-coordinators of the EDO sent out a weekly newsletter to all the students (Simpson & Anderson, 1998). However, “the ‘learning community’ notion is not always welcomed. “Some of the more traditional students see study as individual. They do not want to share and do not expect others to share” (Wickham, 2001, p.3). Understanding the particular needs of the students and knowing them and their context was seen as central to providing good student support by the planners of the POLO program. “Those involved in developing the Hokianga [POLO] initiative considered it essential to address the needs of prospective students by gaining a thorough understanding of the students themselves, their motivation to become teachers, and the culture within which they are immersed” (Delany & Wenmoth, 2001, p. 4).

#### Support personnel

The placement of support personnel can be centralized or regionalized. Deciding on which or building many levels of support is an issue and challenge that has to be addressed according to the needs and resources of each program. In addition support personnel have a variety of titles and roles.

Some programs used mentors to provide student support. Again, this type of support was also carefully considered. “There is a need for carefully conceptualised models of mentoring and mentoring strategies” (Bourdillon & Burgess, 1998, p. 1). In-school mentors were used in the MMP, NITEP, CalStateTEACH and GUIDE programs. However, not all these mentors had subject expertise. Often they were employed to provide general support. In Sri Lanka (Trained Teachers Certificate), where getting to know all aspects of a student’s work is considered important, the issue of linking subject expertise and support was addressed by attempting to see that the tutor is both the correspondence tutor and the regional tutor (Tatto & Kularatna, 1993). Field coordinators and contact people in the community in the TEPL provided assistance with setting up venues and scheduling courses when needed, and with keeping in touch with the students (Sharpe, 1992). In the IITT study groups are organized and a member of the group becomes the leader. In addition, in each refugee camp there is a full-time training supervisor who provides some support. Other personnel make field visits (Said, 1990). Field visits are also part of the ISTTD program (UNESCO, 2000). The EDO had two coordinators based at Massey University who offered academic guidance and general support for the students and staff. In addition Massey University has regional tutors through New Zealand and an extramural student association that supports the students and lobbies within the University on their behalf. The EDO also developed a system of peer mentors where third year students provided support for first year students (Simpson & Anderson, 1998). A local coordinator, who taught, oversaw school practicums and offered support, was appointed for the students in the POLO program (Delany & Wenmoth,

2001). Any field based support people can get out of touch with the program. The MMP addressed this issue by having a university faculty member visit base schools once each semester (Yates, 2000).

#### During independent study

In distance programs the students have to work independently, or in isolation from each other, much of the time. Therefore providing support during independent study times was identified as an important challenge to be addressed. Students certainly feel isolated if such support is not present. For example, the ZINTEC students identified inadequate supervision as a problem for them (Chivore, n.d, p.10). In some programs use was made of new technologies to enable students to support one another during independent study times. For the OU (UK) PGCE the online conferences provided a number of forums where students could consider their views on a range of topics associated with teaching and discuss those with other students, tutors and the course team (Selinger, 1996). The OU (UK) PGCE and the MMP data indicated that students liked to have their computer access at home, to study there with the support that that provided and to use their computer links to share resources with other students (Campbell et al., 1998; Hall, 1998; Selinger, 1996). The EDO also used computer mediated communication to provide support and interaction. Students and lecturers worked in online classrooms and students interacted in small groups. The small groups were identified by the students as important support structures for both teaching and learning and for social support (Simpson & Anderson, 1998, p. 5). The online interactions provided support for the students. “Quite a number of the students have been distance students before and have

commented on the enhanced interaction in this option and the feeling that they are part of a group and do know each other” (Simpson & Anderson, 1997, p. 8). Chat facilities also provided support where students discussed concerns and issues. (p.8). Other online support was provided by the CMC software – calendars, chat rooms, the ability to provide photos, and to build personal web pages (Simpson & Anderson, 1998).

Other forms of technology were also used to provide support. In the TEPL use is made of telephone calls. “This results in more frequent communication, and can be used to quickly clear up questions about courses and course planning. Over the years, we have found that students have not abused the privilege” (Sharpe, 1992, p.83). The fax has been equally useful in the Labrador program. “...it has helped considerably with everything from straightening out application procedures and documentation to providing course sites ... with resources, getting assignments to and from students with considerable expediency, and providing on-site community contacts with course organization details” (Sharpe, 1992, p. 83). For the CESA post is still a means of communication with tutors (South African Institute for Distance Education, 1996b).

In the ZINTEC program a major complaint related to support, was the lack of student/faculty interaction and this lack of interaction impacted on effectiveness. “Math instructors, for example, commented on their hesitancy to introduce new material using distance education because they had no way to assess their students’ understanding and readiness to move on to more complex concepts” (Zvacek, 1989,

p.15). In addition, Zvacek noted that isolation from peers deprived students of intellectual and social stimulation.

The independent study times needed to be supervised. However as the MMP data showed, ensuring tutors are available brings some particular issues and challenges.

Many students may hold unrealistic expectations about individual access to staff. There seems to have been an expectation that every student might ask questions and receive instant individual email answers to frequently answered questions and that members of staff were the first people to ask. On the other hand, staff members expected students to try to work things out with other students before turning to them. They also attempted, wherever possible, to provide “class answers” rather than individual responses if there was any likelihood that might seek the same information. Many MMP students seem to forget that their lecturers were also teaching other students on campus (Hall, 1998, p. 409-410).

In response, the tutors have learnt to indicate times they are available to students (Yates, 2000).

#### In the field

The support seen to be built into programs through their links with schools and through field experience supervision provided particular issues and challenges and some interesting outcomes for the schools and the teachers in them.

Schools soon found that their students were a source of energy, enthusiasm, commitment, and developing knowledge. In some schools, teachers found a strong source of professional development from their students. They gained new knowledge and many were encouraged to resume their own university studies. So the sources of support became mutual, with students becoming very identifiable in their 'base schools' and developing lasting relationships (Yates, 2000, p.19).

For some students in the MMP a further outcome was that they get known in their base school and are offered a teaching position when they graduate. (Yates, 2000).

For some of the MMP students being known had other advantages too. The students have to find for themselves a base school that will allow them to work there. It was reported that students who were already known in a school found this a much easier task than those who weren't (McGee & Yates, 2000). The POLO program also used a base school as the face-to-face teaching and resource centre for their students (Delany & Wenmoth, 2001).

The data indicated that support schools needed qualities that linked with the teacher education program. The OU (UK) was clear that the support school must promote professional debate and be open to learning and challenge (Bourdillon & Burgess, 1998). MMP experience identified that, when working with schools and local tutor teachers, clear expectations, team building, communication and carefully selected partners are crucial to success. Establishing positive relationships and avoiding seeing students as messengers of the university had to be worked on.

Ongoing contact and clear communication was seen as the key to overcoming these issues. (McGee & Yates, 2000).

#### Face-to-face

Face-to-face time also provided support. In the GUIDE program students and tutors who have relatively easy access meet fortnightly, others whose access is more difficult meet in one week residential sessions at the beginning of each semester. Cluster groups operate for students in the extremely remote areas and are supported by local tutors (Thomas, 2000, p. 26). In both South African programs (CESA and CCE) study groups operated and in the CESA program students were able to request contact sessions – but only at major centers (South African Institute for Distance Education, 1996b). The timing of such group meetings is an issue to be considered. In many programs group meetings were often timed to coincide with exam or assignment preparation. However staffing group meetings can be a challenge. Several programs indicated that finding enough local experts to support study or cluster groups is difficult (Aderinoye, 1995; Homeidan et al., 2000; South African Institute for Distance Education, 1996b). For the KIE organizing the face-to-face component, which formed 25% of the program, was difficult (Kinyanjui, 1992). POLO made extensive use of face-to-face time having the students meet on a regular basis in a class group at a base school and work with a local tutor. This provided strong support. However, such a tightly bound support group with strong community links and expectations brought tensions of its own.

There were feelings of guilt about the time away from family activities and the impact of the financial costs of study on the family. There

were also considerable family and community expectation of success. This pressure, combined with the need to adapt to a form of study that was not only at a higher level than any undertaken previously, but also in the form of “distance education”, made it likely that only those students who were very committed and well-supported would complete the course (Delany & Wenmoth, 2001, p.8).

The OU (UK) PGCE use of day schools based in regions helps to reduce travel and time away from home (Selinger, 1996). It was interesting to note that the face-to-face time did not only provide support for the students. In MMP where students attend three one-week on campus teaching blocks “It was thought that the inclusion of some face-to-face teaching on-campus would provide security for university tutors, who were unfamiliar with on-line teaching” (Yates, 2000, p. 17).

RATEP, EDO and MMP also use small groups and although these are online they raise some interesting issues and challenges relevant to all group work. Should students be allowed to form their own groups as they do at Waikato (Yates et al., 2001), or does this privilege those who are close together and may thus decide to meet from time to time and disadvantage those at a greater distance? In addition, Yates noted that groups, while providing great support, can also create pressure and some competition to succeed better than others (p.5). Evaluation of the EDO raised further issues when it was noted that there is little real knowledge of how online student groups work and how the nature of activities relate to participation (Anderson & Simpson, 1998, p. 4).

Residential time is another form of group support and timing is again an issue. For students who already teach, such contact sessions have to be placed during school holidays (South African Institute for Distance Education, 1996b). The MMP planners built residential time into their program but noted that time away from home can create financial and family pressure. However, they also noted that such courses build supportive relationships (Yates et al., 2001). Residential time is common. It is used in MMP), GUIDE, KIE, NTI, IITT, CESA, Sri Lanka (Trained Teachers Certificate), NITEP and ZINTEC.

Undertaking course related work in schools brought another set of support issues. When working on their week to week tasks in schools MMP students had to learn to allow for other classroom and school activities. School-based course components worked best if students tried to indicate their requirements for the whole school term early on. There were also some time problems when students had paid employment as well as being a student. This was identified as a problematic area (McGee & Yates, 2000). Teacher changes were also identified as something that can impact on a student's placement. New teachers may not know the program and may not be committed to it (McGee & Yates, 2000).

#### Formal and informal

In some situations, particularly where the students were teaching, support had formal links. In GUIDE students were granted two half days off from teaching responsibilities. At these times they remained in the school and were encouraged to work with their mentors (Thomas, 2000). In ZINTEC in recognition of difficult study conditions even in the schools, students were given light co-curricular duties so they

could use the afternoons for study (Gatawa, 1990, p. 111). TTD students were paid an allowance and their residential costs were met (Chale, 1993).

Support can also take the form of special preparation or bridging courses and it is likely that students new to distance study will require more support (Aderinoye, 1995). In GUIDE, for example, some students needed short courses in basic English, mathematics skills and study skills (Thomas, 2000). MMP offers two bridging courses – an introduction to academic writing and another on the use of a computer (Yates et al., 2001). In the TAC the issue of preparedness for study has an added dimension as previously obtained levels of competency are often lost as there are so few opportunities for students to apply their skills (Homeidan et al., 2000). For the CALStateTEACH program the issue of preparedness related to the need to pass California State assessment tests for teachers. These tests had to be completed before a second semester in the program. Some students were unable to manage to find time for test preparation and completion as well as study and teach. Program planners have been working to find ways to build in additional time to allow students to meet the requirement so they do not have to drop out of the program (California State University, 2002a).

Student support is also informal. Informal support generally comes from outside the institution or the program, particularly from families. The MMP data noted that support from families was important to success (Yates, 2000). However, informal support also came from institutional personnel. The NITEP program extended their culture of care into personal visits if that was felt to be helpful.

For example, if a student was absent from a bi-monthly tutorial, the tutor or SSO [Senior Support Officer] might well go to visit that student, by bicycle or motorcycle, or even on foot, on a journey of up to 60km, over rough roads and through garden tracks, in sometimes very wet and muddy or extremely hot conditions, risking things like a bicycle breakdown, land mines and other road barriers. A student in a remote and sometimes inaccessible location, who receives a visitor, whether impromptu or planned, feels deeply cared for (Wrightson, 1998a, p. 29).

Informal support also comes from the students and is in some cases formally supported. As has been noted the EDO uses peer support with third (final) year students providing guidance for first year students. Training is provided for the peer support mentors (Simpson & Anderson, 1998).

Finally, providing appropriate student support is also linked to knowing the students and their needs well. In both the POLO program and RATEP, where indigenous student groups were worked with, special emphasis was placed on understanding the cultural contexts and the associated learning styles of the students.

The nature of large on-campus urban institutions militates against tertiary success for Indigenous students who maintain many of their traditional customs, live in small remote communities, ranging from 200 to 1500 people, few of whom are transitory non-Indigenous people, and have limited experience of the world beyond. RATEP was conceived as a program that would seek to redress issues of

geographical remoteness, racial discrimination, economic exploitation, educational marginalization, linguistic plurality, land alienation, and enforced dependency of the Indigenous communities (York & Henderson, 2001a, p.2).

This call for understanding of special characteristics was also echoed in the TAC.

“There is a need to be aware of the social, economic and environmental circumstances of these people [tutors] and through them of the students they work with” (Homeidan et al., 2000, p. 34).

### Student Selection

The selection of students relates closely to student support as the nature of the student group will determine some aspects of the support needed. Student selection was identified by the Commonwealth of Learning in their guidelines presented in Chapter 2 as an area where institutions had to ensure responsible practice. In almost all the programs entry to teacher education programs had some formal educational or vocational experience attainment requirements (see Table 1).

Table 1: Student selection requirements

<b>Program</b>	<b>Student selection requirements</b>
The Remote Area School	Teacher aides and community members
Program/RATEP (James Cook University Australia)	can enter at certificate level. Entry to subsequent levels is based on holding the qualifying qualification from the previous step. (Henderson & Putt, 1993)
Open University Post-Graduate Certificate in Education/OU (UK) PGCE	Applicants must already have a degree. (Banks & Burgess, 1996)
Guyana In-service Distance Education/GUIDE	Untrained teacher aides or acting teachers (Thomas, 2000)
Open University of Israel and a group of Teacher Training Colleges pre-service teaching.	Regular selection criteria for teacher training college (Guri-Rozenbilt, 1992)
Kenyan Primary Teacher Certificate/KIE (Institute of Education, Kenya).	Untrained teachers in a teaching post (Kinyanjui, 1992).
Teacher Education Program in Labrador/TEPL	Regular entry to the University (Sharpe, 1992)

External Delivery Option/EDO (Massey University, New Zealand)	Regular entry to the University (Simpson & Anderson, 1997)
Primary Open Learning Option/POLO (Christchurch College of Education, New Zealand)	Regular entry to the College. (Christchurch College of Education, n.d)
Mixed Mode Programme/MMP (Waikato University, New Zealand)	Regular entry to the University (Hall, 1998).
Nigerian Certificate in Education/NTI (National Teachers Institute)	Unqualified teachers (International Centre for Distance Learning, n.d)
Pakistan Primary Teachers Certificate (Allama Iqbal Open University)	Entry is on the basis of merit (UNESCO Principal Regional Office for Asia and the Pacific, 1990)
Basic teacher qualification (Institute of In-service Teacher Training/IITT, Somalia).	School leavers from primary schools (Said, 1990)
Certificates through to 3 and 4 year Diplomas (College of Education of South Africa/CESA)	Students must be identified by provincial education departments (South African Institute for Distance Education, 1996b)

First level teaching qualification (College for Continuing Education/CCE, South Africa)	Not known
Trained Teachers Certificate (Department of Distance Education, National Institute of Education, Sri Lanka)	Untrained primary teachers (Dharmadasa, 1996)
Government recognized teaching qualification/TAC (Sudan Open Learning Organization, SOLO)	Not known
Teacher Training at a Distance programme/TTD(Tanzania)	Untrained primary teachers (Chale, 1993)
Certificate in Education (In-Service Teacher Training Division, ISTTD, Thailand)	Untrained primary teachers (UNESCO, 2000)
The Northern Integrated Teacher Project/NITEP (Uganda)	Untrained primary teachers with four 'O' level passes at secondary school (Wrightson, 1998a)

Teacher credential (CalStateTEACH, California State University, United States of America)	Primary teachers with emergency credentials who have completed a Bachelors Degree (California State University, 2002a)
The University of Zimbabwe Certificate in Education/ZINTEC	Regular entry to the university (five O-levels plus English) (Gatawa, 1990)

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#### Additional criteria

In addition to the formal or experiential qualification based requirements for entry to pre-service teacher education there were often personal and professional qualities that institutions deemed necessary for applicants to distance delivered pre-service teacher education programs to hold. Data from several providers indicated that the additional qualities sought from applicants to the distance delivered options are critical to consider. In MMP, for example, as well as meeting the professional requirements of selection, there is an emphasis on selecting people who can work collaboratively and independently, have links with schools, and are computer literate (Campbell & McGee, 2000). For the EDO, applicants are required to certify computer literacy and personal access to a computer (Simpson & Anderson, 1997, p.6). In addition, for the EDO, the ability to study at a distance is added as an extra criterion in the selection process and applicants are asked to discuss their prior experience, if any, of distance education. The selection panel takes care to emphasize the special nature of distance study and the likely pressures and demands associated

with that (Anderson & Simpson, 2002). It was also noted that care must be taken in selecting students for a distance option.

Experience suggests that school leavers and less mature applicants, who are usually more mobile, benefit from participation in campus life that includes a wide range of social and cultural activities as well as a wider range of study resources and programme options that are usually less readily available at a distance (Hall, 1998, p. 404).

Care in selection has also been identified as a factor in success. “Careful selection of students has been critical to the high retention rates enjoyed by the online programmes at the School of Education” (Campbell & McGee, 2000, p.2). Often, as in the EDO and the TEPL, there are special provisions for entry of mature students with study or relevant work experience. There is also an effort during the recruitment and selection process to target students who have no other options for accessing a teacher education program (Anderson & Simpson, 2002, p. 279).

#### Links with the profession

Links with the teaching profession and schools was evident in the student selection process. For the EDO it is asked that one of the referees’ statements is from a teacher who knows the student and can speak about their interest in teaching. For NITEP students have to have their application endorsed by their current head teacher as well as the district education authorities (Wrightson, 1998a). For entry to the KIE option students must be sponsored by the Ministry of Education (Kinyanjui, 1992). In South Africa students entering the CESA program must be identified by provincial education departments and meet criteria set by them (South African Institute for

Distance Education, 1996b). In the TTD the selection links were with both the Ministry of Education and regional and village authorities. The Ministry of Education set a quota for each region and set the criteria for selection. Students had to be "of mature personality between 17 and 28 years, and to be of good character and social attitude so as to command respect from their pupils. Finally, they had to pass two screening tests and interviews at district and regional levels respectively" (Chale, 1993, p. 24). The school link in selection was central in the OU (UK) PGCE program where members of the staff of the mentor school conduct the interviews for selection. This is seen as a powerful joint role with the University in acting as gate keepers to the teaching profession (Bourdillon & Burgess, 1998).

#### Equity concerns

The distance options did not have lower standards for selection than on-campus counterparts. In ZINTEC this was identified as a deliberate decision to maintain high standards (Gatawa, 1990). There are also links with such decisions to the concept of parity of qualification which is discussed later in this chapter.

In addition to seeking special qualities in applicants distance options had often been developed as equity initiatives to target quite specific groups of potential students such as the Maori group in POLO, the Torres Strait and Aboriginal people in the RATEP and the Innu of Sheshatshit and Davis Inlet and the Innu and native Settlers of the north-eastern coastal communities of Rigolet, Postville, Makkovik, Hopedale and Nain in the TEPL. However, for some institutions once an option is available maintaining that equity focus appears difficult when the focus group is not culturally distinct. Both the EDO and MMP aimed to provide pre-service teacher

education for mature immobile rural students. However, both programs find the attractiveness of a distance option as a means of retaining younger students in their local communities is a growing issue. “Increasing pressure has also been brought to bear by communities who would prefer to have local school leavers undertake teacher education at home for economic reasons, believing that education in the home will ensure that they continue to live and work there” (Hall, 1998, p. 404). Both programs do, at present, continue to target mature applicants.

A related issue that links program and selection was identified through the EDO where students are selected for a distance delivered three year integrated program. The program is designed for students to work in cohort groups. If a student fails any course in the program the year group based structure is then challenged. There are also students who transfer from the face-to-face program to the distance program. Such students have not been through a distance-focused selection process, distance was not their mode of choice, yet they join strongly established distance students. The transition is often difficult and requires special support. There are also a small number of students who transfer from other providers. They too need support as they become familiar with a new program and usually a new mode of delivery (Anderson & Simpson, 2002; Wickham, 2001).

The student target group for programs with an upgrading focus was generally recognized as finite even if the numbers of students were large. Programs, such as NITEP, CESA, CCE, TTD, NITEP, ZINTEC, and the Sri Lankan Trained Teachers Certificate aimed to provide pre-service or first teacher education for students already working in schools. The issue in such programs was not usually student selection but

providing enough places. However, even when student selection appears less of an issue there can still be concerns to be addressed. In NITEP the intention of the program was to achieve a gender balance in the students but in the end over 90% of the students were men. This reflected the accepted status of women as homemakers (Wrightson, 1998a). However, distance pre-service teacher education options report that the students in their distance options are generally mature, usually married, usually female and usually have children (Anderson & Simpson, 2002; Delany & Wenmoth, 2001; Hall, 1998; Henderson & Putt, 1993; Sharpe, 1992; Wrightson, 1998b; Zindi & Aucoin, 1995).

### Tutors

As has already been seen tutors play a significant part in the student support structures. The issues and challenges identified in providing student support often concern the tutors as well. However, there is a range of issues and challenges specific to tutors. Tutors often come from the teaching profession before moving into academic teacher education programs. The literature pointed to tensions that can arise from different values held by the profession and the academy. The literature also indicated that having adequate tutors and effectively supporting them was one of the key functions that distance delivery must attend to. Tutors, it needs to be noted, are based in the institutions, in regional centers and in schools. The location can provide some particular issues and challenges. In addition, there can be many types of tutors within any one program. The resulting mix of issues and challenges that arise is reflected in the comments that follow.

### Qualifications and skills

Finding qualified tutors is often an issue. Tutors can have both academic and administrative responsibilities so they often need academic qualifications, teaching experience and administrative skills. In GUIDE, for example, tutors, as well as providing academic input, keep attendance registers, a journal record of each session, collect and submit assignments and keep examination records. It was noted that the information gathered by tutors must be detailed and well documented (Thomas, 2000). In the TAC program tutors also required a mix of skills. The tutors lead the weekly sessions, counsel students, observe students in the classroom, mark assignments, help students develop teaching materials and address community and local authorities to ensure their continuing support (Homeidan et al., 2000, p.34). In Sri Lanka (Trained Teachers Certificate) the tutor had a central role in the distance teaching and delivery. The ideal striven for there was for the tutor to write the material, grade the student's work, direct the face-to-face sessions, visit the student in their school and, provide feedback on all those activities (Tatto & Kularatna, 1993). In South Africa, in the CESA, finding tutors meant using student lecturers but even that did not provide sufficient tutors around the country. It was noted that to achieve more, additional funding was needed (South African Institute for Distance Education, 1996b). There were problems getting sufficient field tutors for ZINTEC (Gatawa, 1990). In addition to the academic and administrative skills tutors need it was also noted that, ideally, tutors need skills in, and understanding of, distance education (Chale, 1993; Said, 1990; Sharpe, 1992).

In institutions, such as Waikato University, the move from a fully traditional face-to-face program to a distance delivered option (MMP) showed the need to acknowledge that not all faculty are equally suited to distance teaching. The resistance to new delivery was overcome by the use of faculty who volunteered to teach in the option. All faculty who taught in the first year planned to continue into the second year (Hall, 1998).

It also needs to be recognized that teaching at a tertiary level requires specific expertise. In ZINTEC it was found that College lecturers who were recruited from the schools lacked experience of College level teaching. In addition many of the recruited lecturers were qualified secondary teachers and thus lacked familiarity with primary schools and primary curricular (Gatawa, 1990). When the mix of skills is right the program benefits. The type and role of the on-site tutors is seen as a strength of RATEP. The tutors are reassigned school teachers employed for their knowledge of schools and the teaching profession (York & Henderson, 2001a, p. 5).

As had been indicated in the Commonwealth of Learning guidelines, a web-based teaching environment brings the need for different tutor skills and professional development. “Classroom management skills, learned initially during pre-service training, did not cover the management of learners who might expect access to their teacher 24 hours a day” (Campbell et al., 1998, p.174). “Staff who have been trained as teachers have not necessarily been educated to teach in non-traditional classrooms. When outside their familiar in-class environment, they need support for more than just the technical issues” (p.175). It was further noted that different management techniques are needed by tutors to deal with student expectations and to set times

when tutors will be available (Hall, 1998). Although there were new skills to learn and new issues and challenges to address it was also noted that moving to the use of world-wide-web can bring different rewards. "...many academic staff were intrinsically motivated to teach distance programmes because they enjoyed the opportunity to work with a new group of mature students in a more flexible learning environment" (p.174). Success, however, brings other issues and challenges. "Extra pressures emerged when staff were seen as role models for the use of technology by other colleagues and students" (p. 174). More traditional distance media, such as tele-conferencing, also bring the need for tutor skills (Sharpe, 1992).

### Retention

Finding qualified tutors is one issue, retaining them is another. Not all local tutors are equally competent or diligent (Hall, 1998). However, the tutoring itself may be sufficient reward to ensure retention. "One factor that sustained many of the lecturers was the quality of the learning that took place and the assignments submitted by the MMP students" (p.408). Experience from MMP has already shown that it takes time for tutors to adjust to a new delivery as new tutors may not know the program and be committed to it. (McGee & Yates, 2000). In the TAC program salaries and incentives are low. Staff are often 'lured away' by aid agencies who pay higher salaries. When this happens the institution is forced to engage in unexpected additional training for new and existing staff (Homeidan et al., 2000, p. 36). Some resolution to this issue came from the closure of government teacher education institutions which then made a pool of more experienced tutors available.

In some programs, particularly those that target indigenous people, such as TEPL, the combination of skills needed by a tutor adds further recruitment difficulties. Tutors in that program need academic acceptability and expertise in local languages and culture. Using excellent successful local teachers has worked to a limited extent but the small community environment they reside in makes the role of tutor/instructor difficult for them and there has been a 50-90% annual turnover. Finding well qualified Native teachers would help solve this problem and provide cultural elements as well as a more stable teaching force (Sharpe, 1992).

#### Regional tutors

Working with and supporting regional tutors, located away from the main institution, provides some particular issues and challenges. Often a regional center has just one tutor. Sometimes such tutors work on top of fulltime jobs and find the students expectations, especially in subjects they are not expert in, demanding (Thomas, 2000). One way of responding to this issue is to send the institutional subject expert tutors to the site. In the TEPL program these tutors often visit the students before the course starts. During the visit the tutors deliver material and resources, start the course off and get to know the students (Sharpe, 1992). Experience from the TAC program indicated that constant attention had to be given to appropriate ways of keeping regular contact with the learner and the tutors. In addition every effort was made to have tutors come from areas close and accessible to their students (Homeidan et al., 2000, p. 34). In Sri Lanka (Trained Teachers Certificate) the regional centers were seen as innovative. They were places where one senior tutor and at least four other tutors (as well as laboratory assistants) worked

to provide feedback, facilitate learning, coordinate the residential face-to-face sessions, and, receive, grade and distribute the modules on a weekly basis. The regional centers functioned as meeting places as well as offices (Tatto & Kularatna, 1993). Some of the regional tutors in ZINTEC had to contend with the fact that students could not come to them and the tutors were then often frustrated by the distance they had to travel before they could make contact with students (Gatawa, 1990). In the TEPL travel was also an issue. Small scattered numbers have meant that students have had to travel to one central location and board in the community for the duration of the course. Few tutors can do this. A not entirely satisfactory response has been to break the course into two or three week blocks with students returning home between the blocks to undertake reading and assignment work (Sharpe, 1992). Very early in the ZINTEC program regional centers were moved to be part of the teachers' colleges. This allowed better cooperation between lecturers and tutors and the use of facilities such as libraries and resource centers (Chivore, 1993, p. 59).

#### Tutor roles

In-school tutors are frequently used and often referred to as mentors to highlight the support nature of their role. The OU (UK) PGCE uses a mentor model and seeks very carefully planned cooperation with the mentors and their schools. "There is a need for carefully conceptualised models of mentoring and mentoring strategies" (Bourdillon & Burgess, 1998, p1). The OU (UK) PGCE mentor model requires mentors to be oriented towards adult learning, to be a reflective articulator of competences and to be willing to change. The support school must support

professional debate and be open to learning and challenge (Bourdillon & Burgess, 1998). The GUIDE program also uses in-school mentors and assigns a mentor to each student. The role of the mentor is to provide support not subject expertise (Thomas, 2000). Mentors are also used in the MMP program while in the POLO program an in-school regional center had a local coordinator whose role required organizational and tutoring skills (Delany & Wenmoth, 2001).

In addition to their other duties tutors are often also counselors, a role they are rarely trained for (Thomas, 2000). The TAC program tutors also act as counselors (Homeidan et al., 2000).

Tutors may also be course writers. In GUIDE a senior course tutor is employed for each subject. That person is specifically responsible for the management of the academic content of the course. Such tutors require specialist subject knowledge. They are responsible for writing, setting examinations and assessment tasks, preparing marking schemes and monitoring the consistency of marking (Thomas, 2000).

Building an understanding of the variety of tutor roles and a sense of collaboration can be beneficial. “There developed a unique camaraderie among the staff at all levels, an important reason for NITEP’s success” (Wrightson, 1998a, p. 34). “At all times when individual responsibility areas became overburdened, other members of senior management willingly moved in to help and support” (p. 35).

To enable tutors to undertake their roles well there are resource needs to be met. Often these needs reflect the particular economic and developmental conditions of a country. What is sufficient in one situation would not be in another. The local

tutors in TTD, for example, were given a bicycle or motorbike, audio-cassettes, stationery, books and paper (Chale, 1993, p.26). In NITEP guide books were supplied to tutors (Wrightson, 1998a). Computers are necessary for tutors in the MMP, EDO and the OU (UK) PGCE programs. As well as these material needs tutors also have professional development needs.

### Staff Development

#### Distance education skills

Many of the tutor issues and challenges identified have obvious links to staff development. Not all tutors have distance teaching experience. When the distance mode of teaching is new, the literature had indicated that skills and confidence would need building. At Waikato, in MMP, it was found that staff confidence was increased through a series of extended workshops and 'one-to-one' support. These meetings also served to develop unity among those teaching online (Campbell et al., 2000). Distance teaching often includes the new computer technologies. In the CalStateTEACH program the need for special and ongoing staff development related to the skills needed for teaching in an Internet supported environment (California State University, 2002a).

#### Links to teaching

An interesting outcome of working in a distance delivered program was the rethinking of all aspects of teaching that occurred.

The RATEP experience has allowed lecturers to rethink their pedagogy both to suit the new delivery techniques and to suit the new

cohort of clients. Many lecturers admit to refining their skills as face-to-face teachers. By having to redesign their subjects to suit new delivery modes, lecturers have improved the structure of on-campus versions of their RATEP subjects and other subjects they teach (York & Henderson, 2001a, p. 4-5).

“Teaching staff considered their material even more carefully than for on campus teaching” (Campbell et al., 2000, p. 4).

The usual and accepted teaching approaches needed to be modified. As these modifications were made, the teachers began to look at their on campus teaching leading to changes in on campus teaching. Online teaching then influenced on campus teaching. The move from on campus to teaching online has caused many staff to rethink and challenge some of their long-standing assumptions and practices (p. 5).

This outcome was echoed in the EDO. “Staff found the writing experience valuable professional development and a means to examine closely their own teaching” (Simpson & Anderson, 1997, p. 8).

There appear to be further “spin-offs” from a successful project to other areas. In the NITEP project the training and support given to the staff from the Primary Teachers Colleges who worked with the NITEP students, but also continued their work in their base college with conventional students, raised the pass rates of the conventional students as well (Wrightson, 1998a, p 44).

Distance delivery also leads to other innovations. At Massey (EDO) it was noted that discussion of practical elements of the program and considering how to

deliver them led to inventive and new activities (Simpson & Anderson, 1997, p. 8).

At Waikato (MMP) it was noted that online teaching has developed a more collaborative approach to teaching (Campbell et al., 2000).

#### Type and timing

Who needs staff development and the timing of that needs some careful consideration. The Open University (UK) is clear that training is needed for everyone who works with students (Selinger, 1996). In the TTD it was recognized that there was a need to provide many levels of staff development. In-college tutors were given induction courses in the techniques of distance teaching so they could use the skills when converting on campus taught courses into a distance format. In addition a train the trainer model was used - central and key regional staff were trained as distance tutors and then in turn trained others in their regions. At the grassroots local level, the third level, 2,400 local tutors were trained (Chale, 1993, p.26).

Finding time for staff development can be difficult (Wickham, 2001). In response it was found that staff development had to be built into the initial and then annual planning (Simpson & Anderson, 1997, p. 8). However, where tutors are also employed fulltime in other positions, as in the GUIDE program, finding time for staff development becomes even more difficult (Thomas, 2000).

The call for training is not always from those who design and manage the program. Tutors in the GUIDE program indicated they felt they needed more training (Thomas, 2000).

### Specific needs

Staff development often needs to be focused on specific aspects of the program. In NITEP, for example, it was recognized that guidance was needed for school-level personal tutors who had to assess teaching practice (Wrightson, 1998a). NITEP tutor makers, who were subject experts, found that although they knew their subject well they needed skills in providing meaningful and timely feedback (Wrightson, 1998a). The TAC and the KIE tutors needed specific training in distance education methods (Homeidan et al., 2000; Kinyanjui, 1992) and in the TEPL from Memorial University it was noted that instructors (both local and University) needed skills and understandings of distance education (Sharpe, 1992). Distance education teaching methods and distance education management were needed in NTI (Aderinoye, 1995; International Centre for Distance Learning, n.d). Becoming aware of distance education and its requirements also links closely to material preparation. “Writing course material for online teaching is another area for staff development but is one that the College has much expertise in and is being well addressed through writing guidelines, the editorial process and workshops” (Simpson & Anderson, 1997, p. 8).

Staff development is also linked to quality issues, which will be explored in more depth in a later section. In Sri Lanka (Trained Teachers Certificate) the quality of the courses and materials was seen as an important aspect to monitor and work on. There they recruited competent and qualified teacher educators and provided training for them with a focus on considering new teaching strategies and new communication techniques (Dharmadasa, 1996).

Inexperienced tutors seem to need more staff development than those with more experience. In the TAC operated by the Sudan Open Learning Organization (SOLO) program inexperienced tutors were the only ones available at first and needed much support. Closure of government teacher education facilities made a pool of experienced tutors available and a greater focus was then able to be placed on the students and their support needs. “Because of this experienced cadre of tutors now available to SOLO the emphasis of the support systems is less on the field tutor, and much more on the learner-trainee” (Homeidan et al., 2000, p. 34).

The developmental stage of a program has an impact on staff development. In the EDO program it was found that over time the pattern of staff development changed with a split into introductory and advanced courses (Anderson & Simpson, 2000).

The links of distance education, teacher education and the new technologies provide some specific issues and challenges that were commented on by faculty in the OU (UK) PGCE program. They noted that delivering pre-service teacher education online presents new challenges as there are few models and limited expertise to draw on. There is, they say, a need to set up research alongside developments (Bourdillon & Burgess, 1998, p. 3). The links to staff development are central as teaching and moderating online presents some new challenges. The developments are seen as a conceptual shift from “...the teacher to the learner” (Moon, 1996, p. 8).

### Material

The team and programmatic nature of material development presented in the literature was reflected in the issues and challenges raised in relation to material

design and development. There was also a strong reflection of the focus found in the literature on quality teaching materials specifically designed for the discipline.

#### Staff development links

The design and development of distance material has strong links to the work of tutors and to the topic of staff development. Comments from the MMP have already illustrated this well. In that program the first response to course development was to work to replicate the on campus equivalent. However, it was found that to teach online was not simply a matter of converting material. As has been noted earlier staff considered their material carefully and developed special material (Campbell et al., 2000, p. 4). The EDO experience at Massey also reflects the staff development and materials production links. Massey had patterns and practice established for distance course writing that were drawn on and built on.

Staff were supported in the development of material and online activities in several ways. Seminars given by other University staff with online experience, writing guidelines, editors with expertise in distance education for each writer to consult, computer tutorials for technical skill development, feedback sessions with staff involved in the EDO (once teaching began) and ongoing personal discussion with the coordinators all contributed to the development of staff expertise (Anderson, 1998, p. 3).

It was also noted that it helped when staff wrote for distance delivery the courses they taught face-to-face (Simpson & Anderson, 1997, p. 8). When developing the material it was recognized that the potential volume of email could be an issue. “The issue of

volume concerns the way in which communication is structured and encouraged. It is a pedagogical issue that requires pedagogical answers. It had to be considered from the students' viewpoint as well as the lecturers" (Anderson & Simpson, 1998, p. 2). Monitoring of the email communication found that on average lecturers received 28 messages (not including private mail) per week (Anderson & Simpson, 1997, p. 8). The students received about 105 messages per week and sent 6.5 (p. 7). In a survey students indicated that they often found the level of messaging difficult to cope with. However very few students unsubscribed from any of the optional lists and they strongly agreed that interaction has provided collaboration that had in turn greatly aided their learning (p.9). In the EDO program the nature of interactivity was considered to be important (Anderson & Simpson, 1997, 1998). It was recognized that participation did not necessarily equate to interaction (Anderson & Simpson, 1998, p. 3). The issue of quality of contribution to online discussion was also seen to be important (p.4) and the importance of the print material was recognized. "Print material for online courses need to be constructed in a way that takes advantage of the social characteristics of distance learning" ( p.4). It was noted that both the nature and variety of the activities the students were asked to do needed to be carefully considered as the activities encouraged the desired interaction with other students and the material. As well as designing the material to support interaction it was also considered important to "...design the distance delivery in such a way that the various strands of the programme could be easily integrated by the students..." (Anderson & Simpson, 2000, p. 3).

### Media use

Media use is an essential part of distance delivery. Print has been the most widely used medium in distance delivery and the programs examined in this study again demonstrated the importance of print material. There was no program that didn't use print as a base material. However, a wide range of media were employed in support of or alongside print and the use of new communications technologies was very important in several programs.

The RATEP, MMP, EDO, POLO, CalStateTEACH and OU (UK) PGCE programs all make extensive use of the new communications technologies. For all these programs internet use was focused on the interaction and collaboration it allowed, and answered for them concerns over the need for students and faculty to interact and for students to have access to information sources. RATEP uses an integrated package of print study guides and workbooks, textbooks, audiotapes, video, audio conferencing, telephone, fax and interactive multimedia computer (IMM) courseware and customized CDs and the internet (Henderson & Putt, 1993; James Cook University, n.d-a, n.d-b; Open Learning Technology Corporation Limited, 1995; York & Henderson, 2001a). The teleconferencing is an integral part of the program with 30-60 minutes weekly in most subjects. "Teleconferences are mainly used as either tutorials to prepared agendas, student led seminars, problem-solving discussions, or other group activities commonly undertaken in face-to-face sessions on campus. They also allow for guest speaker input" (York & Henderson, 2001b, p 3). Email has become an integral part of coursework to facilitate submission and return of assignments and student-led discussions (York & Henderson, 2001a).

In MMP email is also used for submission and marking of assignments. The OU (UK) PGCE uses text based materials, audio and video and the students are loaned a computer, a printer and a modem (Leach & Swarbrick, 1996; Selinger, 1996). An online teaching community with expert and beginning teachers is developed. Students are assigned to a group which usually consists of about 15 students. Participation in the online community is voluntary (Leach & Swarbrick, 1996; Selinger, 1996). POLO uses an integrated package of print, tape, video and email (Christchurch College of Education, n.d; Delany & Wenmoth, 2001). The EDO uses print as the main media but also makes extensive use of the internet and some use of audio and video (Anderson & Simpson, 2002). “The issues within the EDO have not been those of technical capability, but of developing an understanding of the pedagogical implications and potential of list use for both staff and course developers” (Anderson & Simpson, 1997, p. 14). In MMP the use of telephone conferences was also tried but found to be expensive. Computer conferencing now replaces that form of communication (Yates et al., 2001). In moving to use computer conferencing issues related to student access were explored. “Account would need to be taken of the need for a range of low tech media to be used at different sites, generally homes, rather than numerous local centres” (Campbell et al., 1998, p. 172).

Radio broadcasts are used quite extensively in some countries. In KIE the radio lessons are designed to support and reinforce the print material. Radio is used primarily to motivate the teachers and to pace them as they work through the study material (Kinyanjui, 1992). Radio was also used to supplement print material in NTI (International Centre for Distance Learning, n.d), ISTTD (UNESCO Principal

Regional Office for Asia and the Pacific, 1990), ZINTEC (Gatawa, 1990) and TTD where the broadcasts were recorded on cassette so they could be played again and also used as a basis for group discussion (Chale, 1993).

The print material used in the GUIDE program, KIE and ZINTEC programs is designed to be self-contained as the students are unlikely to have other resources. An example of the difficulty of having other resources comes from the CCE program, where textbook use has to be a minimal enhancement as they are difficult for students to get (South African Institute for Distance Education, 1996a).

The style of print material for the GUIDE, NITEP, CESA and KIE students is conversational. There are activities and the material is illustrated to add appeal (Kinyanjui, 1992; South African Institute for Distance Education, 1996b; Thomas, 2000; Wrightson, 1998a). However, even with good material students still must know how to use it. In NITEP students found the concept of an interactive module almost entirely foreign. They were initially resistant to making notes and annotating the pages. Over time a positive outcome of the program was that each NITEP student ended the program with a substantial personal professional library. These materials were used by others in the schools where the students were located (Wrightson, 1998a). Print and audio are used in the Pakistan Primary Teachers Certificate program (UNESCO Principal Regional Office for Asia and the Pacific, 1990), CESA (South African Institute for Distance Education, 1996b) and Sri Lanka (Trained Teachers Certificate) (Dharmadasa, 1996) and print alone in the IITT (Said, 1990) and TAC (Homeidan et al., 2000). Print material in all the examples discussed was often produced by writing teams based around subject experts. In the case of

CalStateTEACH the expertise of the Open University (UK) was used to develop courses (California State University, 2002a).

### Management

Considering the mix of media and when use of any particular medium is most appropriate is part of both material development and planning and preparing the teaching. There are also often basic management issues that, unless planned for in detail, can impact badly on teaching as experience from TEPL and IITT shows. In TEPL teleconferencing is being used to address some of the issues of teaching. The amount of teleconference time has been doubled, instructors with skills in using that medium employed and more discussion and time for tutorial work allowed. It has also been found important to set the teleconference site up well and see that it is maintained throughout the course. Often hiring a local person helps this. However, they also need to see that the heating is turned on. On one occasion it was found students were not using the facility because no one turned the heat on (Sharpe, 1992, p. 82). A management issue for IITT, although different, also illustrates how a problem may impact on the program. IITT has no big trucks to transport materials to the refugee camps and relies on ration trucks. It has no say in where the trucks go and consequently when material actually gets delivered (Said, 1990).

### Teaching

Teaching is not well defined in the program reports. Teaching can range from marking assignment work to actively working with students in ways that mirror accepted face-to-face teaching practices.

The staff development and materials preparation data already reported indicated that there are links between the development of distance teaching materials, staff development and teaching. Likewise, students and teaching needs are an important consideration in material development. This link was particularly noted in some programs where there was a strong focus on identifying cultural considerations and developing the material with that in mind.

#### Media use

The RATEP program worked to match the teaching and media mix to the students' style of learning. Audioconferences, for example, used the oral medium valued by the Torres Strait Islanders. "Audioconferencing taps Torres Strait islanders preferred ways of learning by providing personal contact with the authority, the lecturer, in order to obtain clear direction, particularly about subject requirements, through a medium that hides non-verbals and thus helps prevent public shame" (Henderson & Putt, 1993, p 219). Students can also be a valuable source of feedback to faculty about appropriate teaching strategies. The students in the GUIDE program reported that tutors needed to ask more leading questions and encourage the application of learning (Thomas, 2000).

The OU (UK) PGCE experience indicated that the use of online facilities should focus on teaching rather than just conferencing (Selinger, 1996). Online facilities allowed the EDO to replicate the interaction and collaboration of on-campus classes through an emphasis on small and class group work (Anderson & Simpson, 2000, p. 1). It was also felt that the interaction and communication would help the lecturers not to think of the students as isolated (Anderson & Simpson, 1997). Each

week students had group work to complete. This type of work replicated much of the small group work in on campus classes. It was found that students had some advantages over on campus students such as the ability to consider responses, to return to previous messages and to continue discussions. The relative permanence of the discussions meant that “lecturers had a clear picture available of student contributions and a set of course material that can be used for paper evaluation and amendment” (Simpson & Anderson, 1998, p. 3). Three consecutive annual surveys found that students overwhelmingly endorsed the importance of discussion for their learning (Anderson & Simpson, 2000, p. 7). Consideration was also given to the support for teaching and learning computer mediated communication (CMC) could provide. “A CMC based environment also opens up relatively easy opportunities to link students with WEB based learning support. Access to websites and journal are two examples” (Simpson & Anderson, 1998, p. 4). Development of reflective practice was another aspect of the program that was considered important and built into activities undertaken online as well as into the print based teaching materials. Lecturers were concerned to ensure that students developed the habits of reflective practice (Anderson & Simpson, 1998, p. 2). Development of a reflective teacher was also considered important in MMP (McGee & Yates, 2000). There the teaching and learning focus rather than a focus on technology use was one of the critical factors identified in success of the MMP program (Yates et al., 2001).

#### Face-to-face time

Any face-to-face time in a distance program is usually linked to teaching and addressing some of the related issues and challenges. In addition, as has already been

indicated, face-to-face time also has strong links to student support issues and challenges. Study centers are often used as in NTI where there are 140 such centers. The NTI program also runs vacation-time residential schools as a time for teaching. (International Centre for Distance Learning, n.d). In Pakistan (Primary Teachers Certificate) study centers are called tutorial centers but never-the-less their function remains the same and students meet for teaching sessions (Coldevin, 1990). Vacation time and study centers are both used in IITT and Sri Lanka (Trained Teachers Certificate) where practical work is a particular focus at these sessions (Dharmadasa, 1996; Said, 1990). In addition to the practical work residential time can be used to allow contact with subject experts and extra guidance in areas that are proving difficult. This was found valuable in NITEP (Wrightson, 1998a). In the OU (UK) PGCE it was also found that local tutors do not always have the depth of knowledge and understanding necessary to help students so now course team members are more available (online) than in the past (Selinger, 1996). The CalStateTEACH program uses face-to-face time for a mix of support and teaching. Two sessions, one at the beginning which is an orientation, and one at the end which is a graduation ceremony, are focused on support. The other four sessions are seminars on reading, math, science and arts/technology (California State University, 2002a). The student opinion of face-to-face time was not often commented on although in the GUIDE program the students indicated that they valued the face-to-face time (Thomas, 2000). Although face-to-face time is obviously valuable for many reasons the EDO experience reminds us that a key question to be asked is how to meet the requirements of the

subject matter by distance means as face-to-face time may not be absolutely necessary (Anderson & Simpson, 1997, p. 2).

#### Integration of program elements

It was noted in some programs that the program elements needed to be integrated. “The programmatic approach and design at that level was necessary to ensure the desired integration of material and to stabilize the development of groups for discussion” (Anderson & Simpson, 2000, p. 3). In the EDO two challenges were presented when the program was developed: “to ensure there was adequate interaction in support of learning between the students and between students and lecturers and, to design the distance delivery in such a way that the various strands of the programme could be as easily integrated by the students as they are on campus” (Anderson & Simpson, 2000, p. 3). In Israel the initiative between the Open University (Israel) and the teachers colleges to ‘academise’ teaching meant designing a program that valued the pedagogical focus of the colleges and the academic rigor and status of the university (Guri-Rozenbilit, 1992).

#### Results

Ultimately the results of teaching are reflected in student results and performance. Many programs reported good results for their distance students. Completion rates are one type of information that help to provide an understanding of how successful a program has been. Table 2 provides an overview of the data that were available on completion rates.

Table 2: Completion rates

Country	Institution	Program	Completion rate
Australia	James Cook University	RATEP	Graduation rate averaging 82% (York & Henderson, 2001b, p. 4)
England	Open University	OU (UK) PGCE	Not known
Guyana		GUIDE	65% (Thomas, 2000, p. 30)
Israel	Open University		Not known
Kenya	Institute of Education	KIE	88% (Curran & Murphy, 1990, p.24)
Labrador	Memorial University of Newfoundland	TEPL	Not known

New Zealand	Massey University	EDO	87% (Massey University, 2002)
New Zealand	Christchurch College of Education	POLO (Hokianga based cohort)	30 students started, 14 graduated (Delany & Wenmoth, 2001, p. 17)
New Zealand	Waikato University	MMP	Over 70% (Campbell et al., 1998)
Nigeria	National Teachers Institute	NTI	By 1982 over 300,000 students had completed. Since then a range from 12,00 to 47,000 per year (International Centre for Distance Learning, n.d)

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Pakistan	Allama Iqbal Open University	Primary Teachers Certificate	Not known
Somalia	Institute of In- Service Teacher Training	IITT	Not known
South Africa	College of Education of South Africa	CESA	Not known
South Africa	College for Continuing Education	CCE	Not known
Sri Lanka	National Institute of Education	Trained Teachers Certificate	Not known
Sudan	Sudan Open Learning Organization	TAC	Not known

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Tanzania	Ministry of Education using regional centers	TTD	93 % (Chale, 1993, p. 30; Wort, 1997, p. 69)
Thailand	Department of Teacher Training	ISTTD	Not known
Uganda	Selected Primary Teachers Colleges	NITEP	64% (Wrightson, 1998a)
United States of America	California State University	CalStateTEACH	53-68% (California State University, 2002b)
Zimbabwe	University of Zimbabwe (through Teachers Colleges)	ZINTEC	Average pass rate of 82% (Chivore, 1993)

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In addition to completion rates there are many others measures that are used as indicators of successful teaching. The NITEP program in Uganda used various comparisons with conventional college students to assess the performance of its students. Several research projects/exercises were built into the program. Research findings indicated that the NITEP students were performing as well as conventional

students in academic and mock examinations tests, and better in the Teaching Practice (Wrightson, 1998a, p. 44). Research was also carried out on the effect of participation in NITEP on the schools in which its trainees were teaching. The findings revealed a positive impact on the school learning environment, and in the local community (p. 46). A formal teaching competencies research exercise was conducted over several months. It demonstrated an improving level of skill in areas of planning and preparation, classroom teaching and classroom management (p. 47). In a further research exercise Primary Leaving Examination results from selected schools with more than 30% of NITEP students in them with were compared with those with less than 10% NITEP students. This showed examination results improved in the schools with higher levels of NITEP students and remained largely static in the other schools (p. 47). School heads and parents noticed qualitative changes in the NITEP students such as: higher levels of planning and preparation; improved lesson delivery; willingness to participate and lead staff in-service activities; and, willingness to lead and initiate extracurricular activities; increased participation in local and civic activities (p. 47). The KIE program pass rate, which is reported in the table showing completion rates as 88%, compares with 85% for the traditional face-to-face program (Curran & Murphy, 1990). The TTD program pass rate meant that just over half of all Grade C teachers graduated from that program (Wort, 1997, p. 70). The Ugandan NITEP pass rate of 64% compared with a national average for conventional colleges of 59% (Wrightson, 1998a) and no significant difference was found between ZINTEC and conventionally trained teachers (Chivore, 1993). In Sri Lanka (Trained Teachers Certificate) it was found that distance

education trainees were more innovative and used more modern instructional methods than their counterparts from traditional face-to-face colleges (Tatto & Kularatna, 1993). Within its first three years, RATEP quadrupled the number of aboriginal graduates from remote communities for the previous 10 years of the on-campus course (Henderson & Putt, 1993, p. 214). Up to 2001 RATEP had graduated 72 fully qualified teachers, one with an honors degree. The graduates comprise 25% of Queensland's indigenous teachers. Of these four have become principals (York & Henderson, 2001b, p. 4). Success has also been reported from the EDO program. "Overall, EDO students have been very successful. Their pass rates are slightly higher than the on-campus students in non-graded course, and where grades are allocated they do slightly better than on-campus students" (Anderson & Simpson, 2002, p. 13).

At Waikato the results for the MMP students compared more than favorably with on-campus students. 52 out of 54 students completed their first year and 48 of the first cohort completed the course (Yates et al., 2001). This represented a 96% completion rate for the first year compared with an attrition rate of 10% in first year on-campus students (Hall, 1998). The retention rate overall has continued to be higher than for on-campus students and has settled at over 70% (Campbell et al., 1998; Yates, 2000). In the United States of America the CALSTATE program is also proving to be successful. There the retention rate is reported as better than the national average rate for other online College level instruction (California State University, 2002b). Table 2 (completion rates) shows that ZINTEC, TTD and NITEP also had very good rates of student success. There are also other factors operating in

the African countries these programs come from that affected the success rates. It was noted in Uganda (NITEP) that much of the dropout rate was attributable to student deaths and to problems related to national insecurity (Wrightson, 1998a). In Zimbabwe (ZINTEC) good teaching and good results had a wide influence. ZINTEC also showed how distance education could serve "as a very convincing illustration of how distance education may motivate curricular reforms in the conventional system of education..." (Gatawa, 1990, p. 100).

#### Practical considerations

Alongside pedagogy issues there is also a range of practical teaching related issues and challenges to be considered. When to teach the program and the scheduling of courses within the program is one example. This has been a constant issue in the TEPL. There, scheduling has to recognize not only the availability of facilities but also events in the community, the rhythm of work, the loads of instructors and family responsibilities (Sharpe, 1992). Time allowance, recognition and valuing of distance teaching is another practical issue. At Massey teaching in the EDO has been recognized as equivalent to teaching on campus. However, there is a constant need identified to keep the distance teaching visible and recognized. "EDO lecturing staff are urged to diary weekly online teaching slots and value that time as much as they value face-to-face contact" (Anderson, 1998, p.4).

#### Content and approach

The teacher education literature gave clear guidance on the content that should underpin a pre-service teacher education program. The programs did not report in any great detail on this, although aspects of content and how to address the issues and

challenges that arose from the core elements are reflected in comments on material design and delivery. The content elements that were described tended to fall into the two broad categories identified in the literature – programs based on broad general core elements and integrated programs with an extended set of core elements.

In Israel the OUI and the Teachers' Colleges developed a joint curriculum that used the strength of both institutions – academic depth from the OUI and practical links and experience from the Teachers' College (Guri-Rozenbilt, 1992).

Some programs did indicate the general philosophy that underpinned their program and some aspects of program philosophy are inherent in information already reported. The philosophical underpinnings did often reflect the call in the pre-service teacher education literature to include integrative themes in programs and show an understanding of the factors that shape people's lives. RATEP teaching and material design and development reflected the belief that cognitive learning occurs in a socio-cultural context (Henderson & Putt, 1993) and that there should be a strong focus on linking to Indigenous ways of knowing and learning styles (York & Henderson, 2001a). The POLO program had a strong commitment to "local teachers for local schools" and reflected that commitment by tailoring parts of the curriculum to reflect cultural and regional needs (Delany & Wenmoth, 2001, p. 10). The EDO is built on a constructivist approach to learning and aims to produce reflective practitioners, to empower students and encourage interaction and collaboration (Simpson & Anderson, 1998). "Learning in the EDO was conceived of as a social process implying dynamic interaction with and between learners and teachers" (Anderson, 1998, p. 1). Other philosophical underpinnings reflected the basic core elements of

pre-service teacher education program that were identified in the literature. The KIE program aimed to update teachers' academic knowledge of the subjects taught in primary schools and to help teachers acquire skills and techniques to teach the various subjects (Kinyanjui, 1992). The subject knowledge teaching methodology mix was also evident in NITEP in Uganda – a 60:40 balance (Wrightson, 1998a) and in the NTI program which also focused on the basic elements in primary education (International Centre for Distance Learning, n.d).

Aspects of a country's values and beliefs are often directly reflected in programs. In the CESA program there was a stated commitment to the reconstruction and development program in South Africa and to the elimination of imbalances and disparities. The program aimed to contribute to the development of an education system which respects the values inherent in the diverse cultural and linguistic traditions of all the people of South Africa (South African Institute for Distance Education, 1996b). In Sri Lanka Buddhist and Hindu traditions promote the teacher as greatly respected. Teachers are expected to be of a learned nature and to be a role model. In the Sri Lankan context the teacher is an instructor, an organizer, parent substitute, value bearer, and a welfare worker. Teachers should be exemplary in their conduct and disciplined (Dharmadasa, 1996). In Zimbabwe teaching was seen as a means of transforming the society and it was stated that “teachers should be produced in line with the enunciated ideology of socialism” (Gatawa, 1990).

The pre-service teacher education literature had also identified other external political factors such as the standards debate and moves to alternative routes to certification as shaping pre-service teacher education programs. The OU (UK) PGCE

was developed with a focus on the nationally developed teaching standards (referred to by the Open University as competencies) (Bourdillon & Burgess, 1998; Selinger, 1996). Assessment for the students included submission of a portfolio which provided a range of evidence to demonstrate achievement of teaching competencies (Selinger, 1996). The school-based partnerships model was a departure from traditional pre-service teacher education programs with schools rather than colleges or universities used as a site for learning (Selinger, 1996). The CalStateTEACH program is also based on standards for the teaching profession (California State University, 2002a). An issue associated with linking student assessment closely to a base school model was raised by the Open University (UK). There is perhaps a danger of 'cloning' uncritical teachers who simply model themselves on their mentor teacher (Banks & Burgess, 1996).

#### Assessment and providing feedback

Assessment links to teaching and can support the students as they work through their studies. In the POLO program quality written feedback on assignment work was seen to help support the students (Delany & Wenmoth, 2001, p. 14). The need for prompt feedback was also noted in the MMP. It was found that the MMP students applied the feedback to their next piece of work.

There is evidence that students react to their programme as a whole and see feedback in this context. They regard feedback on one assignment as relevant to the writing of the next, regardless of the fact that the next assignment may be for a different course. On the other hand, staff members tend to see feedback on one assignment as

informing the next assignment in *their particular course* (italics in original) (Hall, 1998, p. 410).

It was also noted that feedback needs to be of two types – that which supports assignment work and that which reflects the type of more informal feedback students receive in face-to-face situations (Hall, 1998, p. 411). In the NITEP the students need for enhanced support and feedback led program planners to suggest the introduction of continuous assessment rather than final examinations only. However, this suggestion was rejected based on parity arguments for a match to face-to-face practice (Wrightson, 1998a). In Zimbabwe the situation was reversed and the ZINTEC model of continuous assessment led to a major reform in the national approach which placed emphasis on term-end examinations (Gatawa, 1990, p. 100). Continuous assessment was not without issues for ZINTEC. Slow turn around in marking assignments resulted in problems for the program. A vicious circle that was seen as the program's most critical instructional flaw was created (Zvacek, 1990).

Lecturers were not up-to-date with the marking and were slow to return students' distance education assignments. This developed into a vicious cycle as students became demotivated and started to submit their assignments late. The end result was that students wrote and submitted assignments without the necessary feedback vital for their professional development and academic growth (Chivore, n.d, p. 9).

Continuous assessment provided an entry point to the examinations in the CCE program (South African Institute for Distance Education, 1996a).

### Timing

The timing of assessment tasks can present some challenges. It was noted in the GUIDE program that there can be problems scheduling all the assignments so they are staggered (Thomas, 2000). In the MMP it has been found that assignments need to be scheduled and workloads staggered for distance students (Hall, 1998, p. 411).

The timing of final examination based assessment is set. However, there is a need to consider venues and preparation for examinations. For EDO students examinations are supervised at a series of centers that Massey University has throughout the country (Anderson & Simpson, 2000, p. 1). Seminars on examination preparation are offered throughout the country and an examination skills booklet is also available (Anderson & Simpson, 2002).

### Marking

Who marks the assignment work, when that happens and the nature of the feedback provided presents a range of issues and challenges. Local tutors mark the assignments in the GUIDE program using marking schemes developed by the Senior Course Tutor (Thomas, 2000). In the KIE program students submit assignments at set intervals. The task of marking is carried out by tutors and teachers who are paid on a piece basis (Kinyanjui, 1992).

### Use of technology

It is increasingly common for technology to be used in relation to assignment work as in RATEP where “assessment queries, feedback etcetera can be faxed, electronic-mailed, posted or telephoned” (Henderson & Putt, 1993, p. 219). There are

however, issues that arise when using technology. At Waikato in the MMP electronic submission of assignments means practical examples cannot be included (Hall, 1998). In TEPL where it has been noted the facsimile is used extensively a security concern was noted. "...on a note of caution, the faxing of examinations for administration in a community has to be handled carefully and the location of the facsimile machine within the community taken into account" (Sharpe, 1992, p. 83). The question of security must be considered no matter how assignment and examination work is sent and received. In the EDO assessment has remained largely hard copy print work sent in by post. The work is tracked from the time of its arrival until it is posted back to the student. There has been some use of WebCT for collaborative assignment presentation although this is rare.

Links to maintaining parity of a distance delivered program with an on campus counterpart were seen in the assignments tasks. The EDO assessment patterns and tasks were largely a mirror of those on campus (Anderson & Simpson, 2002).

### Field Experience

Field experience was identified in the pre-service teacher education literature as the most universally acknowledged core element of a pre-service teacher education program. Nevertheless, the programs studied tended not to single out field experience for much comment.

### Sites

Choosing the site for field experience had been indicated in the literature as an important consideration. However, in many of the programs, planners did not seek to choose the site/s for field experience. In some programs such as IITT and CalStateTEACH this was because the students were already teaching and needed in their schools. For the CalStateTEACH students, learning support faculty visit them each month to observe, advise and evaluate and adjunct site faculty act as mentors (California State University, 2002a, 2002b). For the OU (UK) PGCE, the choice of partnership school for field experience was made by the student. Open University (UK) research has shown that this choice is mainly based on local reputation for being a good school (Bourdillon & Burgess, 1998). In the case of TAC, where students are also teaching, additional practical skill work was taught during residential times (Said, 1990).

In the CESA program a five week block of field experience is provided for students who have been referred by various provincial education departments for initial training. Students already teaching are not expected to need field experience (South African Institute for Distance Education, 1996b).

### Supervision

Having students at a distance during field experience raises many issues and challenges. Comments from the MMP illustrate this.

The school-based part of the degree program was probably the most contentious component. University staff raised issues like: How could the quality of school-based practice be maintained in remote schools?

How could the quality of mentoring and supervision be assured? Could all student teachers be placed in quality schools and classrooms?

(McGee & Yates, 2000, p.2).

Supervision and monitoring of students during their field experience was addressed in many ways. Many distance programs have students spread over large geographic areas. The EDO program has three year groups of students. The supervision of first and second year students while on field experience has been by means of a combination of visits from University based lecturers and contracted school principals or senior teachers. Every student is seen at least once a year by a University lecturer. The normal visiting pattern for third year students on field experience is for lecturers to visit three times. Because of both the distance and the expense associated with this an alternative was looked for. The solution was a mix of telephone conversations, videoed lessons which are sent in and one personal visit. The associate teacher is also phoned at the time of the first telephone conversation so that their perspective is considered as well. They also write a final written report. In a study of this alternative visiting pattern it was noted that lecturers found the use of the telephone helped develop a sharper focus for discussions, they liked the use of video, found the telephone conversation with the associate teacher made the actual visit with the associate teacher easier and the students were at ease with the supervision pattern (Broadley, 2000). In NITEP the emphasis in field experience in the first two years is on providing formative feedback. Students are observed monthly by tutor counselors who know them from their work with them in weekend tutorials. In the third year the assessment is graded. Throughout the field experience

school practice workbooks provide guidance by setting out expectations for all the stages (Wrightson, 1998a, 1998b). Using tutors who know the student is also seen as important in Sri Lanka (Trained Teachers Certificate) and NITEP where students are visited three times per year (Tatto & Kularatna, 1993; Wrightson, 1998a). In the OU (UK) PGCE the mentor teacher supervises the field experience and works along side the school coordinator for the assessment (Banks & Burgess, 1996). Program tutors are also used in CESA, ZINTEC and TAC (Chivore, 1993; Homeidan et al., 2000; South African Institute for Distance Education, 1996a), and in ZINTEC education officers are also used. In the GUIDE program students are guided and evaluated on their classroom management and they have to produce a portfolio to show their teaching growth (Thomas, 2000).

Academic staff are often involved in visiting and assessing students on field experience as well. The issues and challenges to be addressed then can be different. In Sri Lanka (Trained Teachers Certificate) and the TAC the tutors who know the students well through supporting them in other aspects of their study also visit them in their schools (Homeidan et al., 2000; Tatto & Kularatna, 1993). However, this type of arrangement can impact on workloads. In ZINTEC the loads for visiting students became extremely high, well beyond the level aimed for (Zvacek, 1989, p. 139). In the EDO visiting of distance students is no longer solely undertaken by academic staff. "Many of these placements are remote making it difficult for the College to monitor the student and the associate teacher. Every effort is made to have a staff member visit students every time they are in school placement. Isolation,

travel restrictions and time constraints do not always allow this” (Wickham, 2001, p. 4).

The ZINTEC program highlighted other issues and challenges field experience brings. Initially it proved impossible to maintain the level of student visiting on field experience that is necessary - students (96%) and lecturers noted this inadequacy (Chivore, 1993, p. 59). This was rated a critical flaw. The situation improved, although the visits to teaching practice students were conducted to observe work in the classroom and rarely was there time to discuss assignments or other problems based on the distance modules (Zvacek, 1989, p. 115). Supervision in schools was often not adequate because head teachers had poor academic and professional qualifications and were unable to give the professional support required. Initially there was also a separation between college instruction and field supervision but this was solved by making the field lecturers part of the college in field experience departments (Gatawa, 1990). There was also some lack of connection between the methods of the course and the methods of the schools in areas such as lesson planning. These problems were not exclusively ZINTEC problems - they also existed in the conventional programs (Chivore, 1993, p. 59).

Associate or cooperating teachers can need both support and knowledge of the program they become part of when working with a student on field experience. “Student teachers gained much from being placed in schools where mentors provided them with appropriate role modelling, advice and guidance and collegial support” (McGee & Yates, 2000, p. 2). However, in the EDO it was noted that providing

support for associate teachers who are remote from the institution is more of a challenge than usual (Wickham, 2001).

There are also field experience related impacts for the students. The students in ZINTEC indicated the lack of supervision was a problem for them (Chivore, n.d). Some teachers and principals recognized the competence of the MMP students and gave them more responsibility than they should. Students found it hard to negotiate in these circumstances (McGee & Yates, 2000, p. 5).

#### Use of technology

The new technologies were shown to be impacting on some other aspects of field experience. The online capacity has enhanced the ability of students to work with lecturers as they participate in their field experience. It allows for discussion, clarification of tasks and the provision of a range of activities to prepare the students for the experience (Simpson, 2002). In the OU (UK) PGCE program the online conferences were found to support the students both before and during the school postings and resources and ideas were shared (Selinger & Parker, 1996).

#### Timing and duration

The timing and duration of each block of field experience can have many patterns. The OU (UK) PGCE allows 18 weeks in schools (Leach & Swarbrick, 1996). The 18 weeks is broken into three stages. Stage one is a three week block field experience, stage two is four weeks block field experience and stage three is eight block field experience. In addition at least two weeks must be spent in a different school. Students must also maintain a contact with their host school attending for day or part day events over the life of the course to total another three

weeks of time (Banks & Burgess, 1996). In Sri Lanka (Trained Teachers Certificate) field experience is 10% of the program (Tatto & Kularatna, 1993). In the EDO field experience is approximately 7 weeks per year (Wickham, 2001). In TTD teaching practice days were Tuesdays and Thursdays each week. Students were supervised by local tutors, head teachers and/or class teachers. They were also observed and critiqued by other students (Chale, 1993). Fulltime teaching blocks were used in ZINTEC and every effort was made to place two or more students in a school so they could support one another. Students were placed throughout the country with a particular focus on rural areas (Gatawa, 1990). In KIE and in TTD practical teaching experience is built into group meeting time and residential time as well (Chale, 1993; Kinyanjui, 1992).

In the partnership arrangement of the OUI and the Teachers' Colleges the field experience element was the responsibility of the Colleges and seen to draw on their expertise (Guri-Rozenbilt, 1992).

## Quality

### Parity of esteem

Quality is often addressed by institutions through seeking to ensure that a distance delivered qualification enjoys parity of esteem. This concept had been presented in the literature as a responsibility to the wider teaching profession. Many of the programs analyzed recognized this responsibility. The RATEP program is a mirror of its on-campus program, differing mainly in modes of delivery (York & Henderson, 2001b, p. 2). "RATEP students study the same subjects, are taught by the same lecturers, complete assessment tasks at the same standard as their on-campus

counterparts, and receive exactly the same reward as students who undertake pre-service teacher education at the Cairns and Townsville campuses” (p. 3). Similar concerns for the issue of parity are reflected in the responses to this challenge by other providers. At Massey (EDO) parity of the qualification was largely ensured by the program as only the delivery was seen as different (Simpson & Anderson, 1998). “It was clear that a choice lay between bringing students on-campus at regular intervals or developing an online programme to achieve an equivalent end. The latter was the course chosen” (Anderson & Simpson, 2000, p. 3). “The degree programme, both on-campus and distance offerings, had to be accredited by the national Teacher Registration body external to the University. The University has a system in place to evaluate each course within the programme every time it is offered to students” (p. 8). “Academic transcripts do not record the mode in which a course has been studied” (Anderson & Simpson, 2002, p. 5). In 1999 the only official distinction between modes of delivery, that of funding, was removed when the government made funding equal for all modes of delivery at undergraduate level (p. 5). The teaching community that graduating students become part of understood and accepted distance education as there had, for many years, been provision of in-service teacher education through distance means (Anderson & Simpson, 2002). POLO students must meet the same standards as those required of Christchurch College of Education students anywhere in the country. On graduation they are qualified to teach anywhere in the country not just in their local area (Delany & Wenmoth, 2001, p. 11). At Waikato maintaining the standards expected of on-campus students was considered an important quality issue. “The courses are the same as those taught on campus. They

are taught and assessed by staff members who also teach face-to-face students” (Hall, 1998, p. 404). “Credibility of the credential was to be maintained by offering a programme which led directly to the already-established university degree and diploma in teaching” (Campbell et al., 1998, p. 170). However, one of the biggest factors in convincing staff [of the quality of MMP] was the standard of achievement of the MMP students - in course and practical work (Hall, 1998). “In other words, any doubts that individual members of staff may have had about the possible effectiveness of this alternative programme, were countered by evidence about the attainment of the 1997 cohort” (p. 408). In Israel moves to ‘academise’ the primary teaching force have led to an initiative where the Open University of Israel works with some of the Teachers Colleges to provide a university link in their programs which will in turn ensure the parity of qualification that is sought (Guri-Rozenbilt, 1992).

The TTD program in Tanzania showed there are other external measures of quality that have also been used. After the three years of the program the students were once again evaluated - on exactly the same basis as on-campus students. They had to still be of fit character, competent in teaching practice and academic and pedagogical achievement. There were occasional instances of students being found to be of unfit character. The final assessment of teaching practice was moderated by panels. Students were randomly selected for this. Finally, the students had to sit equivalent (but not the same) final examinations as the on-campus students (Chale, 1993, p. 30). One researcher, however, raised the issue of whether equivalent exams are equal exams (Wort, 1997, p. 144). Outside evaluation has also been used in

RATEP which has been favorably reviewed by three outside evaluators (Open Learning Technology Corporation Limited, 1995). In Uganda programs had to fit within national frameworks (Wrightson, 1998a, p. 31). Links with external governance bodies and having key personnel on steering committees can be critical. “A project such as NITEP requires these linkages, and the fact that they were made proved to be a key aspect in ensuring success for the project” (p. 32). For the CalStateTEACH program parity of qualification is sought through the curriculum being based on California Standards for the teaching profession (California State University, 2002a). Accreditation and evaluation processes ensure equivalence of qualification and the students receive equitable treatment with students on-campus (California State University, 2002b). In the ZINTEC credibility was established through the fact that the ZINTEC colleges were, like the other colleges, linked to the University of Zimbabwe, and that the curriculum was similar to that in all the other colleges (Gatawa, 1990). The Department of Teacher Education in the University of Zimbabwe was responsible for monitoring, assessing and evaluating syllabi which were also sent to external examiners so as to maintain international as well as national standards (Chivore, 1993).

#### Evaluation processes

Evaluation is part of the quality management processes identified as needed in distance education. Evaluation processes built into the programs demonstrated a range of approaches to evaluation and identified a number of issues and challenges. GUIDE illustrates the type of multi-layered evaluation process that is taken by some programs. There, there is monitoring at the program level through day-to-day record

keeping with these records eventually being sent to a central office. Monitoring of course material is also undertaken through a Senior Course Tutor for each subject. That person is specifically responsible for the management of the academic content of the course. The Senior Course Tutor is qualified and recognized as a specialist in the particular subject area. They are also responsible for setting examination questions and assignments, preparing marking schemes for examinations and assignments and they also monitor marked scripts for consistency of marking. The approach is aimed to gather information that can be used to make the program better and to establish regular and systematic means for gathering data (Thomas, 2000). Sri Lanka is another country where continuous and systematic course evaluation has been introduced. There the quality of courses and material has been monitored and worked on. Means of addressing this within the Trained Teachers Certificate have been to recruit competent and qualified teacher educators, provide training for them and have them consider new teaching strategies and new communication techniques such as the use of audio-visual aids (Dharmadasa, 1996). In the TAC a similar focus was evident. "It (is) imperative that a regular, effective monitoring system is put in place, and that this is part of the support systems for both the learner and the field-based tutor" (Homeidan et al., 2000, p. 33). Two levels are focused on in the TAC - the learner and the field worker/tutor and the aim is to have thorough planning and linking of all project activities. "Effective monitoring requires thorough planning and should link all project activities being monitored to clear aims" (p. 33). In addition a monitoring system where staff and Ministry supervisors meet helps to identify problems and make appropriate responses. It is felt monitoring should also assess

whether target groups are benefiting, the level of community commitment to the program and whether the roles of all involved are clear. As has already been indicated included in the NITEP were several research exercises. “Nearly all the qualitative and anecdotal findings indicated a very positive impact. Qualitative measures also showed NITEP students performing as well as, or better than, conventional students, and their schools performing better than those that did not participate in the project” (Wrightson, 1998a, p. 7). “While the materials and formal pedagogy were highly regarded, and administration systems (including student records) developed well, it was the ability of the programme implementors to retain contact with and knowledge of the learners in their context, which became pivotal” (p.25). There were some weaknesses in the curricula (more pedagogy needed - especially in science, cultural subjects and English), lack of learning aids (especially in science and practical subjects) and in the quality of tutoring personnel in the field. The project constantly tried to address these weaknesses. “...if there was a weak point in the system, it was the monitoring of tutor effectiveness. Tutors were widely dispersed over the region, which meant that their performance could not always be as effectively monitored and problem cases could not always be dealt with as effectively as project managers would have wished” (p. 51). ZINTEC also had program evaluation designed to identify strengths and weaknesses so that the overall quality could be improved (Gatawa, 1990). The CalStateTEACH program has a full-time curriculum director and the curriculum is adapted to respond to new research, feedback, text change and website changes (California State University, 2002a). Feedback is often instrumental in identifying areas for further development and this

along with careful evaluation results in on-going modifications (California State University, 2002b).

### Institutional Support

Teacher education literature had indicated that there is a range of issues and challenges linked to teacher education institutions and their pre-service teacher education programs that could impact on the planning and effectiveness of a program. The distance education literature indicated that there needs to be a very specific focus on systemic management of distance delivered programs. The programs explored in this study are managed in a wide variety of institutions and in many diverse ways. Some aspects relating to management have been presented through consideration of the provision of tutors, study centers, support structures, material distribution, field experience and teaching resources. The literature also suggested that within the institutions interdisciplinary tensions, faculty rewards based on research and publications rather than teaching and profession-focused work were likely to be concerns.

### Cooperation

Institutions do not always work alone. A joint program brings additional issues and challenges. The OUI, who delivers a program in conjunction with the Teachers' Colleges in Israel, identified the need for strong collaboration and cooperation between institutions (Guri-Rozenbilt, 1992). This challenge reflects the Commonwealth of Learning's concerns that there needs to be clear articulation of responsibilities and operating style when institutions work together. The need for

consistency can apply within a program as well. In the ZINTEC several Teachers' Colleges were involved and there was some lack of unity and conformity across the Colleges. This led to some communication difficulties and some lack of accountability (Zvacek, 1989). The model of distance education became inconsistent (Zvacek, 1990, p. 6). Working with other institutions may also happen at the planning stages as has been reported in the CalStateTEACH option where the Open University (UK) was consulted. In Sri Lanka there was careful systematic planning for the distance option and advice was sought from distance education experts in Sweden (Tatto & Kularatna, 1993).

In Sudan when planning the TAC it was recognized that:

A collaborative and co-operative team approach within the institution, from management level to field level, will ensure that all components of the institution will understand learner and tutor needs (and what each other is doing), and this should promote the planning processes required to service those needs, and thus support the learner and field worker (Homeidan et al., 2000, p 34).

The focus on the learner as part of a systemic approach was also evident in the NITEP. "The programme was strongly people-focused and committed to the retention of a structured contact with the isolated learner who did not have access to any of the technological links taken for granted by many distance learners elsewhere in the world" (Wrightson, 1998a, p. 47). The KIE recognized that close and planned cooperation between all parties to the development, monitoring and delivery of the program was needed and that there also needed to be clear definitions and

understandings of each section's responsibilities (Kinyanjui, 1992, p 121). When the systemic links were not recognized the issues that can arise are illustrated in the KIE program. There, the face-to-face component was the most difficult aspect of the program to deliver. It demanded staff time, suffered from budget cuts and understaffing and drew criticism from the students. This reflected a lack of understanding on the part of policy makers that distance education required systematic and substantive support services (p. 120).

#### Access to services

The literature on distance education highlighted that the remoteness of the students means that the institutions have to give particular attention to providing access to services. For established distance institutions, such as Massey (EDO), the issues may not be great although the question of how to best utilize the established distance support structures of the University was still asked. In addition, another key question asked what special challenges did distance delivery of teacher education present to the established procedures. It was noted that one advantage of undertaking an initiative within a university that has a long established distance program is that advocating for distance students is accepted (Simpson & Anderson, 1998).

However, in all institutions each of the areas of support needs to be examined and additional support needs considered. Library services are an example. "Access to this [the library] has been straight forward in a University with many years of distance teaching experience and thousands of extramural students" (Simpson & Anderson, 1998, p. 3). However, at Waikato (MMP) where distance delivery was new it was found that "one of the early obstacles that had to be overcome was the

way in which library materials would be made available” (Yates et al., 2001, p. 4). The response was to dedicate a librarian to the distance students. The role of this person is expanding as more aspects of information literacy are built into courses (p. 4). Access to library resources for the RATEP students was greatly enhanced by being linked to the Internet (James Cook University, n.d-a, p. 1). For students in ZINTEC when regional centers were moved to the Teachers’ Colleges that supported the program better library resources became available (Chivore, 1993, p. 59). Students in ZINTEC who had no ready access to reference materials had to buy a set of text books to support their study (Gatawa, 1990). In the GUIDE program textbooks and other enrichment materials are made available to students through the Regional Learning Resource Centers. Equipment and apparatus for subjects such as science are provided by schools in the vicinity of the Centers. Although not very well developed book boxes are also provided for schools where trainees may find it difficult to access resource centers because of transportation and economic difficulties (Thomas, 2000). The CalStateTEACH program has established small libraries that include more than 50 books and videos at each regional center (California State University, 2002a).

Providing library resources may not be sufficient to ensure that students can use the material as evaluation from the NITEP shows. Most of the students had few (or long forgotten) reading or study habits.

Students were not part of a ‘reading culture’. Most of them came from contexts where books were either non-existent or very rare. In addition, their surroundings did not make reading easy: few students

had access to light at night, and family and community obligations meant that students' reading time was continually disrupted"

(Wrightson, 1998a, p. 23).

Students were provided with advice on how to read effectively and tutors were made aware of the problem. At residential sessions reading techniques were a focus and students were encouraged to form study groups and read together (Wrightson, 1998a). Reliance on print materials also presented a problem given the students lack of a 'reading culture'. Some trainees "...staggered under the weight of such large amounts of material. Thus the audio programmes, once they were finally introduced, were very popular, well received and notably effective" (p. 51).

A further area of institutional level support, noted in the TAC, related to material production and delivery and how important it is that the production of materials is timely (Homeidan et al., 2000, p. 34).

The nature of their students and the special issues they might bring needs to be considered at an institutional level. At Massey it was recognized that the mature students the EDO would attract would mean consideration of recognition of prior learning. In addition developing a distance option meant considering whether all the choices offered within a program on campus could and should be made available to distance students (Simpson & Anderson, 1997, p. 9).

#### Use of technology

Technologies, especially the new computer based ones, can help use administrative time effectively. The Open University (UK) noted that one message can reach many in a more cost effective manner than letters or phone calls. Regional

part-time staff can work at hours that suit them as messages can be sent to students at any time and discussions can be run over timeframes that suit all participants (Selinger, 1996). The use of computer based new technologies does bring new institutional support concerns. At Massey when the EDO was introduced it was found that using online facilities meant maintaining and setting up lists. Some level of technical support also needs to be available and the software needs to be robust and appropriate to the program (Simpson & Anderson, 1997, p. 9).

Working in distance delivered programs raises some special issues for tutors. Distance teaching, in universities, is less valued than research. It often represents increased workload. "If institutions want staff to become involved in distance programmes, the hidden work involved in teaching in this way must be acknowledged and rewarded" (Campbell et al., 1998, p. 174). There is also an increasing trend towards regarding distance teaching as simply part of what a lecturer must do (Campbell et al., 1998). These trends can tend to isolate tutors. This was an issue raised in ZINTEC where it was found that few faculty members had the opportunity to share ideas or discuss research (Zvacek, 1989).

### National Support

The literature on teacher education showed that teacher education is developed and delivered within a complex mix of societal, political and educational forces. Educational reforms, standards-based outcomes, alternative certification, competition and deregulation were identified as likely to impact. The literature also suggested that some changes are global demographic and technological changes. However, the developmental status of a country was likely to shape all decisions

made in response to the changes. The distance education literature suggested that a convergence of demographic and technological factors was likely and may bring together face-to-face and distance institutions.

#### Impact of political forces

The impact of educational reforms was obvious in several programs. The Open University (UK) had, as has already been indicated, based its pre-service teacher education program on the nationally developed teacher standards. In 2002, in response to a government Green Paper, the Open University (UK) moved its pre-service teacher education focus to the need identified within the Green Paper to produce more secondary teachers and ceased the primary option (Open University (UK), 2000). In New Zealand the three programs reported on reflect outcomes to wide-ranging educational reforms. These educational reforms established tertiary institutions as self-managing and the government aimed to make the provision of teacher education more competitive (Campbell et al., 1998). There were several important outcomes. Institutions set their own policy and direction, traditional providers no longer had a secure place and there was a rapid rise in the number of providers (Campbell et al., 1998). For the traditional providers a positive outcome was that the reforms allowed them to be more responsive to students needs. In this climate institutions were more prepared to look at new initiatives (Simpson & Anderson, 1997, p. 1) and communities were keen to seek new ways to meet their needs as comments from Waikato illustrate. “Local leaders have pointed out to the university that local people who are suitable for teacher education are unable to move to the university city for full-time study because of family and other commitments”

(Campbell et al., 1998, p. 169). "...it is not difficult to see that if the University of Waikato did not respond to the imperatives raised by rural districts, other providers would probably do so" (p. 170). "Increasing pressure has also been brought to bear by communities who would prefer to have local school leavers undertake teacher education at home for economic reasons, believing that education in the home will ensure that they continue to live and work there" (Hall, 1998, p. 404).

The motivation for this new form of delivery was primarily educational politics revolving round the issue of how schools in rural communities could overcome teacher shortages. Local leaders in teacher shortage districts have pointed out to the university that local people suitable for teacher education districts have pointed out to the university that local people suitable for teacher education are unable to move to the university city for full-time study because of family and other commitments (McGee & Yates, 2000, p. 1).

However, there are distance education issues to also consider as a comment from Massey illustrates.

While competition may work to ensure that complacency is not rewarded and that innovation and responsiveness is a focus it is too simple to suggest that in distance teacher education competition will provide the infrastructure that could ensure a quality national provision and avoid costly replication of equipment and expertise (Simpson & Anderson, 1997, p. 10).

### Distance education understanding

While in some programs, as already illustrated, governments have moved to be less controlling and involved, in other situations central government sets directions and policies. In those programs an understanding from central government is needed and must be worked for. In Zimbabwe it was noted that the support of the Ministry of Education was seen as a key element leading to the ZINTEC program being accepted (Chivore, 1993, p. 64). However, in Kenya it was noted that the need for central government understanding had been on-going. “Apparently policymakers have yet to be convinced that distance education, despite its name, does require systematic support services if the learners are to reap the maximum benefit” (Kinyanjui, 1992). A lack of clarity from the government was also noted in Sri Lanka where policy on teacher education was said to have been unclear and inconsistent. There had been many changes in policies and government directions (Dharmadasa, 1996). In the Sudan there is a need to recognize that the correct officials have been contacted in the correct manner.

Because of the nature of the government and community organisation in Sudan much time can be spent on ensuring that the correct officials have been contacted in the correct manner, to ensure a training programme, with its organisation, can operate in an area, with the necessary official support (Homeidan et al., 2000, p. 35).

### National infrastructure

The condition of national infrastructures has to be considered when undertaking distance delivery. The problems that arise can be varied and unexpected.

It has already been noted, in the section on materials, that the mail service is unreliable in many countries. For the programs studied poor postal services were identified as an issue in Australia, Kenya, Nigeria, Somalia, Uganda, Sudan, Labrador and Zimbabwe. Some responses to this have already been noted. In Zimbabwe the problem was resolved for ZINTEC students when a decision was made to cluster the students in schools where there was a reliable postal service. This also provided added support for the students (Chivore, 1993, p. 60). The extensive use of technology in the delivery of RATEP partly reflects the fact that postal and passenger services to the islands are only once a week (Henderson & Putt, 1993).

National infrastructures may also provide benefits that can be capitalized on. Tanzania had long experience in distance education - in co-operative education – that had operated throughout the country. So by mid 1970's there enough national experience of distance education to provide the expertise on which to build a teacher education program. There was also a general philosophical belief that teachers could be prepared at a distance without large expense. “The planners drew on past experiences of correspondence education in the country and utilised the existing political and adult education structures which had been established in the regional and district authorities and the village schools” (Wort, 1997, p 22).

Difficulties with national infrastructures are largely problems associated with developing countries. However, although on a much smaller scale, developed countries need to consider similar issues too. In England a small number of areas do not have local dial-up (Selinger, 1996). In New Zealand the geographical location of students can mean telecommunications are not robust (Wickham, 2001). If, as at

Waikato, graphics are sent via computer it may be impossible to receive that information (Yates, 2000).

#### Geographical and developmental concerns

Some programs faced numerous national-based issues and challenges. In Labrador the TEPL program was designed to address a wide range of infrastructure and geographical issues. All of the communities served by the program are geographically isolated, separated by virtually impassable terrain and accessible only by air year round and by coastal boat for a few weeks in summer and early fall. Winter weather has to be considered.

On one memorable occasion, an instructor left St John's to travel to one of the communities to teach a course. The next day a phone call was received from the instructor giving the message that she was stranded in a nearby community and the plane had returned to Goose Bay due to the heavy snowfall further up the coast. Two weeks later she was still in the same community waiting for the snow to stop and the plane to return (Sharpe, 1992, p 82).

Over the years many forms of distance delivery had been tried and failed. Correspondence study failed as the weather means postal services could be irregular. Difficulties included: lack of basic texts, supplies and reference materials in communities; scarcity of good instructors who can relate to Native people and are familiar with distance education methods; scheduling that accommodates schools, communities, and families; harsh winter weather; and, language differences. Solutions, some of which have been reported on in greater detail in other sections of

this chapter, have been: a combination of teleconferencing, contact between instructor and students, community contacts and support persons; use of facsimile; collect phone calls; prudent hiring of onsite tutors; and, use of Native people as resources (Sharpe, 1992).

Guyana was another country with many difficulties and the responses illustrate how difficulties may have to be overcome step by step. The geography of Guyana provides challenges to education providers because although the bulk of the population lives on the narrow and relatively accessible coastal plain there is still about 15% of the population which inhabit the forested and mountainous hinterland where there are few roads and little in the way of modern communications infrastructure. The GUIDE program does not, as yet, serve all the regions of Guyana but it is expanding (Thomas, 2000). Sudan is a large country with a scattered population, some in very remote areas where access and communication are also difficult. Study conditions are poor and supporting resources very limited. Size, topography, communications and inaccessibility are problems. Seasonal rains and poorly developed postal and telecommunications are difficulties. There is also a volatile security situation which means that access to learners and tutors can be unpredictable. In the refugee camps people can be moved without much warning. The unsettled situation also means people can quite suddenly decide to move. Transport is erratic and it is very difficult to arrange the transport needed to get students and tutors together. There is also a range of difficulties associated with the poverty of the target recipients. The refugee and displaced people target population for the TAC can have difficulty funding their training and finding study time as

during the day they have to work to maintain their subsistence level living. These communities often don't have buildings with electricity to use for study meetings (Homeidan et al., 2000, p. 35). In Uganda most of the students lived in villages and almost none had access to electricity. They also lacked the most basic communication facilities such as transport, postal services, telephones and radios. In some regions of Uganda where NITEP operated students faced insecurity because of rebel forces. As a consequence some were unable to get to face-to-face sessions and some had materials (and homes) destroyed. Reading was regarded by some rebel forces as dangerous and subversive. The project replaced 150 sets of material that were burnt by rebels (Wrightson, 1998a). Somalia and Sri Lanka are also countries with serious internal political problems and unrest (Said, 1990; Tatto & Kularatna, 1993). In Zimbabwe poor accommodation and absence of electricity in the majority of the rural schools militated against effective study (Gatawa, 1990, p. 111). However, the national-level decision to implement universal primary education drove the ZINTEC development in spite of the difficulties (Zindi & Aucoin, 1995).

#### Outside funding

Dependence on outside funding can bring a range of issues and challenges. In Somalia the IITT program has to contend with shortages in refugee funding and cuts in budgets from the aid agencies for refugees (Said, 1990). There are similar issues in Sudan where SOLO (Sudan Open Learning Organization) is the supervising and implementing institution, the State ministries provides venues and transport and UNICEF provides funding for the payment of tutors and the printing of material. It is an irony, noted earlier, how those agencies supporting the program also lure tutors

away by paying higher salaries (Homeidan et al., 2000, p. 32). The Uganda NITEP was 80% funded by the World Bank. Budgeting for such a large project and working with the World Bank was found to be extremely complex (Wrightson, 1998a). The ZINTEC program also had to manage funding from several sources (Gatawa, 1990).

#### Economies of scale

A range of issues relate to size and the concept of economies of scale. The size of the TAC operation is marginal in terms of sustainability and economies of scale (Homeidan et al., 2000, p. 35). In addition staff numbers are small, job descriptions are broad and aspects of each person's work are neglected from time to time. Prioritization of tasks then becomes an issue and this is often overwhelmed by sheer workloads. "So, for instance, when materials are required for the learner in the field (a vital component of the support system), the store-keeper, who has the responsibility, may be preoccupied with another aspect of his wide brief e.g. public relations" (p. 36). Roles become blurred and accountability, reporting and supervising distinctions become unclear. This often leads to a breakdown in systems. In Labrador the response to small numbers of students for the TEPL has been to offer a course to a number of communities at the same time (Sharpe, 1992).

#### Summary

The results presented in this chapter indicate a strong degree of convergence with the distance education literature. However, there is less convergence with the teacher education literature. Discussion of the implications of the results and developing of

recommendations for good practice in the distance delivery of pre-service teacher education and for future research follow in Chapter 5.

## Chapter Five

## DISCUSSION AND RECOMMENDATIONS

This dissertation sought to identify the good practice foundations that should guide the design, delivery and management of distance delivered pre-service teacher education programs. This end point was reached through a meta-analysis of twenty-one programs of distance delivered pre-service teacher education in order to identify the issues and challenges faced within the programs and the responses that were made to them. The meta-analytical process involved analysis of increasing complexity from the early identification of broad categories of data through to the substantive interpretations that the findings represent.

In this final chapter the findings which were generated by the meta-analytical research process are discussed. The three areas of practice that framed the literature review are used to provide a structure for the discussion of the findings and the suggestions for good practice. There were, of course, some points of divergence from the literature and some points where the literature provided little guidance. These points represent weaknesses which are ultimately reflected in the recommendations for future research and development. The areas of practice are not ordered as they were presented in the literature review but in an order that allows the discussion to proceed from an area of strength to those of increasing weakness.

Recommendations for future research and development in the field of distance delivered pre-service teacher education are presented before the chapter concludes

with some conjecture about future directions for distance delivered pre-service teacher education.

### General Introduction

Successful distance delivered pre-service education is about more than an understanding of the three areas of practice, distance education, teacher education and distance delivered pre-service teacher education, as they were outlined in the literature to form a conceptual framework for this dissertation. That conceptual framework failed to address the intersection of practice that distance delivered pre-service teacher education should represent. Success in the distance delivery of pre-service teacher education comes from resolving the very particular issues and challenges that arise at the intersection of the two disciplines of distance education and teacher education. Understanding this intersection of practice is the key to the development of good practice in distance delivered pre-service teacher education.

### Introduction to the Findings

Developing guidance for good practice from multiple program examples is valuable as program planners are then able to make decisions based not on unsupported perceptions and whatever limited information they have available but on a real depth of experience. “Interest in the education of teachers through distance learning suffers from an unfortunate polarity between those few who have studied the programmes and the many whose experience tells them that something is not well with primary education today” (Wort, 1997, p. 22). This study has attempted to provide access to the experience of those who have worked in and studied programs

of distance delivered pre-service education in an effort to offer to program planners a broader view of research and practice that might lead them to more informed decision making.

Broadly speaking this study has shown that the development of distance delivered pre-service teacher education programs has been in response to either equity issues or emergency conditions, although in some programs these two driving forces merged and in others competition was, or is becoming, a motivating factor. Such foundations have resulted in quite different approaches and values between programs. So too, has the placement of the teacher education programs within a range of education institutions. Layered onto this picture are differences in the developmental, economic, political and educational contexts in the countries the programs were found in. Finally, differences of scale and length of programs adds even more complexity. Consequently, there is caution in the comments in this final chapter.

The literature describing distance delivered pre-service teacher education was scattered over a wide range of journals and other publications. It largely described initiatives that have been developed with neither a firm institutional base in previous distance education practice nor a clear focus on a grounding of teacher education research and theory. The documented distance delivered pre-service teacher education programs appeared to have developed largely as responses to local conditions and somewhat in isolation. There appeared to be little knowledge of similar work being undertaken by others. Yet it was quite clear that many of the issues and challenges faced were common. The new developments rarely seemed to

be enriched by the proven as there was little systematic evaluative or research work documented and thus a scant body of scholarly material. The picture presented was of a disconnected range of developments with many of those addressing the same issues and challenges in isolation but driven by common internal and external forces.

As well as acknowledging the lack of shared experience and the resulting poverty in conceptual underpinnings for many programs there are also limitations that must be acknowledged when drawing from multiple sources as a means to discern good practice. The programs examined in this study were far from homogenous. Each program studied represented in some sense a unique response to a unique set of circumstances. As was acknowledged at the outset the study was of course limited by the literature available to the researcher. The literature, as a secondary source, has been filtered through the lens of the original writers. There can be no doubt that the intended primary audience for the material had some impact on the contents and the willingness to identify issues and challenges. These limitations are somewhat addressed by the research process that has been followed. In addition to acknowledging the general limitations outlined above more specific limitations relating to each of the three key findings are noted in the appropriate sections that now follow.

### Finding One: Distance Education Practice

#### Summary and Explanation of the Finding

Attention to distance education practice in the twenty-one programs analyzed for this study was generally well considered. The institutional homes of the

programs, although many of them new to distance education, in the main, demonstrated willingness to engage with the demands of distance education and addressed difficulties within the constraints that they faced. Their endeavors were not always entirely successful but never-the-less they generally continued to consider the issues and challenges and work in a manner that demonstrated a reasonable understanding of the systemic nature of distance education practice.

### Convergence with the Literature

The literature related to distance education used the work of Moore and Kearsley (1996) to provide a framework that highlighted the systemic and interwoven nature of distance education and emphasized the need for planners of distance delivered programs to understand the demands of each component of distance delivery. In Chapter 4 these components were presented under a series of broad themes. The themes relating to: student support; student selection; tutors; staff development; material; quality (including assessment); institutional support; and, national support provided material relevant to this first finding. There were many examples from the programs of close convergence with the distance education literature. That convergence is discussed now with a view to demonstrating, through illustrative examples, support for the first finding.

#### Student support

Calder (1994) emphasized the importance of student support as critical to the success of a program. Recognition of this importance was clearly demonstrated in the programs. The care with which this task was approached is perhaps best illustrated in

NITEP. “While the materials and formal pedagogy delivered by the project were highly regarded, it was evident by the halfway point of the project that it was the student support system and the ‘culture of care’ which it fostered that was crucial to the success of the programme” (Wrightson, 1998a, p. 51). Other metaphors for support illustrate the concern for student support that was general. In the OU (UK) PGCE care was taken to develop a safe climate for students while MMP and EDO emphasized the development of learning communities. Tait’s (1995) comments that student support needs to acknowledge the identity of the learners to complement the mass-production of the materials was clearly echoed in POLO and RATEP where care was taken to identify culturally appropriate specific support needs. The counseling and guidance needs identified by Moore and Kearsley (1996) were reflected in the use of tutors, mentors, coordinators and field tutors of all types in the programs. Programs may have been stretched for resources but in all programs the need for student support was recognized and in some cases, such as the Labrador TEPL and the Ugandan NITEP, great persistence was shown in keeping in touch with the students and supporting them during independent study times. However, there was one area that was somewhat overlooked. Acquiring the skills and habits of effective distance learners (Moore & Kearsley, 1996) was not well reported on in the data from the programs. As students are generally selected for teacher education programs and in distance delivered options it was noted that the students are generally mature, this may be less of an issue than for other distance delivered programs.

### Student selection

The Commonwealth of Learning (1997) in their operating guidelines for distance education institutions pointed to the importance of responsible student recruitment practices and the duty that institutions have to ensure students can complete a program once they have begun. These responsibilities and duties seemed to have been taken seriously in the programs studied. All the programs had entry criteria and many such as the EDO, NITEP, CESA, OU (UK) PGCE and that of the KIE applied additional profession focused criteria such as the need to demonstrate support from a referee within the teaching profession. There was also care taken to emphasize, at the time of selection, special skills that might be required for success in a program such as computer competency for the MMP, EDO and OU (UK) PGCE programs. Many programs, such as POLO, EDO, MMP, RATEP and TEPL demonstrated commitment to equity concerns and made real efforts to target students who had previously found access to teacher education difficult to gain. Providing enough places and achieving desired gender balance were two issues that were not fully addressed in some programs. The data that were available relating to completion rates showed that programs could be said to have been successful in taking students through to the completion of their program. Careful selection begins that process of success and student support has been seen to continue it. Tutors provide a link between the support aspects and the other elements of a distance delivered program.

### Tutors

Tutors were shown to be central to the success of a program. They must know the program and the students well. Verduin and Clark (1991) had pointed to the importance of providing adequate tutors and supporting them and this appeared to have been well recognized within the programs studied. However, the sheer diversity of roles, multiplicity of locations tutors worked in and the wide variations in expertise of the tutors presented problems that many programs struggled to attend to. The difference between developed and developing countries was apparent. Programs in developing countries such as those in Sri Lanka, the Sudan, South Africa and Zimbabwe, for example, accepted the centrality of the tutors in delivery and teaching and endeavored to allow the tutors to engage with the students through face-to-face sessions, material writing, marking and academic counseling. However, finding qualified tutors was usually an issue partly because the mix of skills and experience ideally needed was rarely found in the personnel available. If the right personnel were found they were often lured away to higher paying positions as happened in the Sudan TAC program. The workload for tutors was often difficult as they juggled all the work dimensions to maintain the many roles expected of them and increase their skills. In addition, they often had to travel large distances and were sometimes employed on a contract basis. In contrast, programs in England, United States of America, Australia and New Zealand were generally able to manage the challenges of having tutors at many sites, providing support for new tutors and having a sufficient pool of expertise to be able to employ tutors with the specific skills and experience they required. If there were skill gaps, such as in Labrador where tutors who were

native language speakers were needed, the programs generally had sufficient resources to consider ways of overcoming the problem. In other cases such as at Waikato where distance teaching and computer skills were needed by the tutors, people generally found the new learning required of them a satisfying professional experience and one that was supported through a staff development program.

### Staff development

Providing appropriate staff development was included in the Commonwealth of Learning guidelines (1997) and its importance supported by Moore and Thompson (1997) who indicated that it was likely that many tutors would need to develop an understanding of distance education and gain confidence. Tutors also have to learn how to project themselves in other than the face-to-face medium (Mason, 1999). These points were certainly reflected in data from the programs. It was true that confidence was often gained along with the development of distance education knowledge and materials. This was well illustrated in MMP, RATEP, EDO and CalStateTEACH where tutors had to develop distance education knowledge and while doing so found they examined their own teaching practice in some depth. The experience combined both valuable staff development and personal growth. The OU (UK) PGCE experience however showed that where distance delivery involved the use of new technologies there were few models and limited expertise to draw on. In some large programs such as the Tanzanian TTD program and in programs where most of the tutors were inexperienced such as GUIDE the provision of staff development was a very significant undertaking. The importance of addressing this need appears to have been well understood. The difference that having some

experienced tutors within the pool of tutors can make was well illustrated in the TAC program when the closure of government teacher education facilities made a pool of experienced tutors available and eased the pressures for staff development thus allowing some additional focus on the students and their needs. There are benefits to the wider tertiary teaching profession as well. Gatawa (1990, p. 109) noted that there was movement of lecturers between the ZINTEC program and the conventional programs. This he said facilitated cross-fertilization of ideas and encouraged a community of interest.

#### Material

Distance delivery produces permanent and public materials – for the students, for the schools and for the faculty/tutors who produce them. Visser (1994) saw this public face of distance education as one measure of quality. The programs studied seemed to meet this measure well. The materials that were produced appeared to enrich students and schools as well as the material writers. The rewards for the writers have been illustrated in the staff development discussion. Comment from NITEP demonstrates the student and school links well. The materials that resulted from NITEP were regarded as an enviable resource, described by one head teacher as ‘pure gold’. In classrooms and schools throughout the region, these modules became a treasured commodity, well-thumbed and used by numbers of teachers far beyond those directly trained by the project.

For faculty it means firstly as they produce distance materials there is a valuable process as they reassess their course and carefully examine it.

Secondly, tutors usually develop a range of activities, readings and

other material for distance delivery that then enriches their face-to-face teaching (Wrightson, 1998a, p. 51).

Developing distance teaching materials requires some understanding of both design and of the students (Calder, 1994; Rowntree, 1994). Generally, programs recognized these requirements well. Print was the dominant medium used supported by radio in the ISTTD, NTI, ZINTEC and TTD programs. Interactive materials, the tutorial-in-print style (Rowntree, 1994), were favored although the level and type of interaction varied considerably. Those programs with new technology links such as EDO, MMP, OU (UK) PGCE, and RATEP generally strove for high levels of interactivity while others such as ZINTEC, CCE and CESA had to ensure that the interaction was built into the conversational style of the printed material.

In addition to understanding of design and of the students Visser (1994) had emphasized the links there must also be in the course material to the relevant educational disciplines. Programs generally addressed this through using subject experts and a team approach. The subject experts usually also had a role in assessment and evaluation so that they could monitor the quality and acceptability of the material.

### Quality

The linking of quality with good instructional design was noted in the literature by Visser (1994). The programs tended to take a multi-layered approach to evaluation and monitoring of quality. The mix of day-to-day record keeping along with monitoring of course material and formal evaluations that were often used was

illustrated in the approaches used in Guyana, Sri Lanka and Sudan. In NITEP several formal research based evaluations were built in but this was unusual among the programs. The value of regular reviews was noted in TAC and CalStateTEACH where such processes helped to identify difficulties before they became too large. Striking a balance between quality and quantity was a tension that ZINTEC encountered (Gatawa, 1990).

Other processes concerned with maintaining quality are reflected in the sections on institutional and national support systems.

#### Institutional support

Two key aspects of institutional support were highlighted in the distance education literature. The Commonwealth of Learning (1997) had identified the need for clear guidelines where institutions worked together. The programs of the Open University of Israel (OUI) and ZINTEC provided examples of how collaboration and cooperation needed to be carefully planned. The OUI appeared to have identified the expertise of each partner and built on that. ZINTEC, however, had some difficulties working with a number of teachers colleges and it was reported that a lack of conformity and unity developed. This led to some communication difficulties, lack of accountability and an inconsistent model of distance education. There were also instances of institutions seeking support from others outside their country and recognition of the collaboration and cooperation needed within an institution. The former point is commented on later in this discussion. The latter point was illustrated in the TAC and KIE programs where it was agreed that close cooperation and collaboration needed to be constantly worked at to avoid problems arising.

The second aspect of institutional support was the provision of services. In this there was some division evident between those institutions such as Massey (EDO) where there was a history of distance education and those such as Waikato (MMP) who were new to distance delivery. Materials production and the provision of library services were areas identified by programs for particular attention. The use of new technologies as an aid to improve services and materials was evident in some of the programs (OU(UK) PGCE, EDO) in developed countries.

#### National support

As well as the materials from distance delivered programs producing wider benefits, other aspects of the programs can sometimes also be beneficial and spread beyond the institution. “A distance education system that may have started as a stop-gap measure and then developed as an alternative system may become an integral part of the mainstream education delivery system” (Kinyanjui, 1992, p. 122). In the ZINTEC program some of the approaches used were adopted by other colleges of education (Zindi & Aucoin, 1995, p. 35). “...following the ZINTEC approach, the conventional three year teacher training programme in Zimbabwe has been reformed to be given over four years now” (Gatawa, 1990, p. 100). Both ZINTEC and NITEP provided models of alternative assessment practice and in Zimbabwe the ZINTEC approaches of on-going assessment became an agent for change in the national system. The ZINTEC approach has been incorporated in all colleges and thus has become a permanent feature of all teacher education programs - Zintecisation (Chivore, 1993, p. 63). ZINTEC led to distance in-service and a distance delivered BEd for teachers. It also brought changes into conventional colleges.

Such impacts reflect Perraton's (1991) point that links with other institutions will mean consideration of how policies and practices can be linked across the institutions and reflects Visser's (1994) parity of esteem concept. Paying attention to building parity of esteem was widely evidenced in many programs. EDO, POLO, MMP and RATEP were programs where the distance delivered option mirrored an on campus counterpart. Most programs also had national standards of some type to meet. In some countries such as New Zealand, England, USA and Australia there are accreditation standards, in other countries such as Uganda, South Africa and Zimbabwe a central education ministry set standards and often syllabi.

#### Additional points of convergence

In addition to the illustrative examples of convergence with distance education practice presented above, there are other reasons why a reasonable degree of convergence can be claimed. Firstly, planners in several programs such as CalStateTEACH and the Sri Lankan Trained Teachers Certificate did seek support from those with expertise in distance education. Secondly, a number of programs such as the EDO and the OU (UK) PGCE were developed within institutions that had considerable distance expertise and they drew on their extensive understanding of distance education practice.

The points of convergence presented have supported the claim for willingness on the part of those planning and maintaining the programs of distance delivered pre-service teacher education studied to engage with the practice of distance education. Although the convergence links are strong there were, however, some points of divergence which lead to limitations that need to be acknowledged.

### Limitations Relating to Finding One

Care needs to be exercised in identifying limitations as not all issues are exclusively distance education issues. Often the issues, such as those of insufficient places for students, achieving desired gender balance, and, the employment of casual tutoring staff are program issues and need to be addressed within the program planning and evaluation processes. However, the interdependence of the distance education elements noted by Moore and Kearsley (1996), Saba and Shearer (1994) and the focus on organizational infrastructure promoted by Visser (1994) can work to deflect attention from identifying the program related deficiencies. Care must be taken to ensure that due attention is paid to all component parts of distance delivery. A focus on the program and the operation of the whole as a complete, high quality learning environment becomes important.

There was little clarification of what an understanding of distance education meant. The planning for many of the programs recognized the need for distance education knowledge. However, without more understanding of the planners' awareness of that concept it was not possible to evaluate the depth and value of their related initiatives such as staff development and provision of institutional support services.

As part of the focus on quality it had been suggested in the literature (Nielsen, 1997; Perraton, 1993) that the ability of graduates from distance delivered pre-service teacher education programs to teach well should be one measure of quality. However, generally it seems once students graduate their links with the pre-service institution are broken and gaining information about their teaching ability is difficult.

Another example of minimal link with the students was noticeable in program evaluation processes, where the student voice appeared to be somewhat absent.

Tait and Mills (1999) had suggested that there was a convergence of demographic and technological forces likely to bring together face-to-face and distance institutions, and The Commonwealth of Learning (1997) had predicted that there would be more partnerships and consortia. In spite of many of the issues and challenges being common, though different in degree and context, but not unique, institutions did not seem to seek partnerships or consortia, although replicability was considered in the planning of some programs. NITEP was carefully set up so it could be replicated – probably within Uganda or a very similar country. In Kenya “The experiences gained in the use of distance education for training primary teachers have been used to train adult literacy teachers (at certificate level) and secondary teachers (at degree level)” (Kinyanjui, 1992, p. 121). In Somalia the model developed by the Institute of In-Service Teacher Training (IITT) is to be extended (Said, 1990). Rather than seeing convergence what was illustrated through the development of programs such as MMP, POLO and CalStateTEACH was more and more institutions moving into distance education themselves.

More significant were points of absence from the literature. The distance education literature did not provide guidance on a range of issues and challenges that arose - for example how to address the impact students’ life circumstances have on a tightly systematic approach. The EDO had identified two particular issues. Firstly, the impact of a student failing a course (or having to withdraw) on a program structure and, secondly students without distance education study skills transferring

into a cohort of distance students. Although Tait and Mills (1999) recognize that many adult students seek or need part-time and flexible study options, the distance education literature does not fully address the issues and challenges associated with program delivery where the time a student will spend in a program means several years of fulltime distance study.

Although, with some limitations, understanding of distance education has been evidenced in the programs studied this does not remove the need for some clear reminders of good practice. Those presented here reflect the need to continue to recognize the essential foundations that distance education literature provides even for new developments.

#### Implications: Good Practice Recommendations

1. Student support for students in a program must be multi-leveled and include means for gaining academic and personal support and for all participants to communicate.
2. Student selection should include an emphasis on the special demands of distance delivery.
3. During independent study times effective supervision and feedback is necessary.
4. Integration of all components of distance education, while essential, must not be allowed to mask program based issues or divert from a focus on creating a learning environment.
5. All staff involved in distance delivery of a program must clearly understand their roles.

6. Staff development for all levels of personnel involved with a distance delivered program is necessary and must be on-going.
7. Evaluation processes should include formal research focused projects and seek the students' voice in these undertakings.

### Finding Two: Teacher Education Practice

#### Summary and Explanation

Through the teacher education literature considered for this study a set of core elements that should be in any pre-service teacher education program was identified (Ducharme & Ducharme, 1999; Naish, 1990; Perraton, 2000a; Schwartz, 1996). Although these core elements were generally thought to be too broad and lack integration of content and method it was acknowledged that in some situations programs would be unable to deliver any more than that core. Ideally though, those core elements should be set in an integrated, interdisciplinary program that links theory and practice, acknowledges the social construction of knowledge, has a problem oriented and student centered approach and is seen as part of a continuum of professional development (Ishler et al., 1996). Such programs would also acknowledge the impact of a range of internal and external forces on pre-service teacher education programs and encourage analysis of those forces and reflection on practice (Darling-Hammond, 1999). Reflection of this conceptual framework in the programs studied was mixed.

### Convergence with the Literature

Areas of convergence with the literature were found principally in the general themes relating to: student selection; tutors; material; teaching; field experience; quality; institutional support and, national support. The literature had indicated that it was likely that there would be clear differences between the development and depth of content in programs in developed and developing countries (Perraton, 2000a) and this proved to be the case. There must be, for example, real differences between programs such as NITEP and ZINTEC who were training first generation teachers for first generation learners and those of institutions such as Massey, where teacher education programs have been offered for decades in a country where education has been universally available at all levels for a considerable time.

#### Student selection

Qualities such as sensitivity, intelligence and enjoyment of children were suggested in the teacher education literature as necessary for a teacher to have (Howey, 1996). The student selection processes that were in place in the programs studied generally appeared to acknowledge special teaching related qualities students might need and, as has already been indicated, in cases where computers were used in the delivery, sought students with appropriate skills.

#### Tutors

Specialized programs such as pre-service teacher education require tutors who exemplify and model the qualities sought in the students. Finding and retaining tutors has already been identified as difficult in some situations. Using teachers from the school system, which is where most teacher education academics originate from,

brings the profession related skills and dispositions but can present several other difficulties. In ZINTEC, for example, it was noted that tertiary level teaching requires different skills and in the MMP it was found that the transfer from traditional tertiary teaching to online tertiary teaching brought the need for different teaching and management techniques.

The literature pointed to pressures in teaching such as the wish parents have for schooling that allows their children to achieve more than they did and pressures related to the public nature of teaching. Pressure also came from lack of status for the teaching profession and the political climate that surrounds teaching (Darling-Hammond et al., 1995; Howey, 1996; Imig & Switzer, 1996). Some reflection of the pressures related to the public nature of teaching was seen in TEPL where the small community environment made the role of tutor an uncomfortable one for many teachers. Political pressures were also evident and are commented on in the section on national issues.

The teacher education literature also identified the dual pressures that come from the profession and academia as often being difficult for tutors to balance (Clark, 1999). Distance teaching can easily become a hidden and poorly rewarded part of workload it was noted by tutors in MMP.

### Material

Development of material is mostly a distance education concern. However, the literature had been clear that good pre-service teacher education programs are thematic and cohesive (Shulman, 1990; Soltis, 1990) and connective in their approach (Young, 1998). Several of the programs studied (MMP, RATEP, POLO and EDO)

were provided by experienced teacher education institutions and the planners worked to replicate the established face-to-face practice. At Massey in the EDO a programmatic approach was maintained in the distance delivery to ensure that materials were integrated. Incorporating the various strands of the integrated program across individual course material packages was one of the challenges that was considered to be foremost for the program planners.

### Teaching

In the teacher education literature the use of technology was identified as one of the societal changes likely to impact on programs (Imig & Switzer, 1996). Evidence of this was clear. In Australia, England, New Zealand and the United States of America the programs studied (RATEP, OU (UK) PGCE, EDO, MMP and CalStateTEACH) made extensive use of the new technologies.

The division between developing and developed countries was evident in teaching approaches and the nature of the programs. For example, online capabilities allowed the EDO to replicate the reflection and dialog of on campus classes and the use of small group and whole class forums enabled collaboration to occur. Particular emphasis was put on developing the habits of reflection through the group and class work. All the developments were set within the constructivist approach of the program as a whole. Similarly, RATEP teaching and material design also reflected a program that valued the social construction of knowledge. On the other hand, the KIE program, NITEP and the NTI program had a primary focus on helping students increase their own subject knowledge.

### Field experience

Field experience, the literature indicated, is the most universally acknowledged core element of a pre-service teacher education program. It is enacted in many settings and uses many models. While the literature urged program planners to look for sites of excellence, to ensure variety, prepare for diversity and to encourage reflective analysis many programs did not comment on field experience and those that did gave limited information.

The NITEP students were reported as doing better in teaching experience than conventional students and in Sri Lanka students in the distance delivered Trained Teachers Certificate were found to be more innovative and use more modern methods than their face-to-face counterparts. The reports of no difference between the students in MMP, EDO and ZINTEC and their face-to-face counterparts could lead to an assumption that those students also performed well.

Field experience, the literature indicated, was another area where there was likely to be some clear divisions between developed and developing countries. There was some evidence of this. With the exception of CalStateTEACH all of the programs where students were already teaching were in developing countries. For these students all their teaching experience will be in one school. Such a lack of variety has been identified as likely to provide insufficient modeling for students (Young, 1998).

Field experience is specialized and requires tutors to have an understanding of how classrooms and schools function. In NITEP guidance was needed to help tutors with this role. Some programs use contract staff to visit some or all of the students on

field experience. Others such as CESA, ZINTEC and TAC strive very hard to have tutors who know the students visit them. In some cases the level of visiting was inadequate.

Generally, students in all contexts were valued in the schools for the enthusiasm and energy they brought and for the new and up-to-date knowledge they contributed. In some programs, such as NITEP the students became much needed classroom teachers who it was reported had a positive impact on the schools and in the local communities.

The literature had indicated that, in general, institutions delivering teacher education would want to seek sites of excellence for the field experience but in reality they had little ability to select and supervise sites as they were limited to local schools (Ishler et al., 1996). Distance programs operate over a wider geographical base than conventional face-to-face programs. They may have more schools to choose from but less knowledge of the worth of the schools. It is surprising that in some situations such as OU (UK) PGCE and MMP the choice of a base school is left to the student.

### Quality

The teacher education literature identified what Howey (1996) called the public nature of teaching and Sindelar and Rosenberg (2000) identified as the subservience of teacher education to many masters to illustrate the varied and often contradictory views of quality teaching has to respond to. In general the programs studied strove to demonstrate that they were of good quality. Often, as has already been commented on, this was through establishing parity with conventional face-to-face programs or meeting external sets of standards. Evaluation processes were also

used to show quality. Sometimes outside evaluators were used such as in RATEP. In others, ZINTEC and Open University of Israel, monitoring or use of material and expertise, from other institutions such as a university were seen to provide assurance of quality.

#### Institutional support

Moves to place teacher education programs within universities were commented on in the literature. Two key points were made. Firstly, the reward systems of universities focus on publications and research. Good teaching is often not considered relevant to promotion or recognition. Secondly, Cowen (1990) had suggested that university-based teacher education programs rarely show evidence of careful program design. There was some support in comments from MMP for the tensions created by the first point.

#### National support

A range of national or State based factors that impact on teacher education was identified in the literature. The emergence of international reforms identified by Young (1998) was evident. Schriewer had noted that a western-style of restructuring was evident worldwide. South Africa provided illustration of this. There the reforms had been rapid and had allowed unplanned and unsustainable growth. In New Zealand similar reforms had led to a competitive environment commented on in the data from the programs there. In England the teacher education standards board established there is an example of similar boards in other countries. The establishment of standards boards and the related teacher education standards encourages what Pring (1994) called “can-do” competencies. There is on-going

debate about whether such programs account for the “wholeness” (Bottery & Wright, 2000) that the literature suggested should characterize a pre-service teacher education program.

Darling-Hammond had noted that it is not uncommon for lower teacher education certification standards to be brought in at times of teacher shortage. Almost all the programs studied for this research were developed because of teacher shortages. The introduction of universal education (Bottery & Wright, 2000; UNESCO, 2000) and the impact of AIDS (Iredale, 1993) are mega-forces that were seen to be causes of teacher shortages in some of the contexts. None of the programs appeared to be working to lower standards than the norm in their context although some of the programs such as CalStateTEACH and OU (UK) PGCE were somewhat controversial developments. It was not clear if that controversy also related to the nature of their delivery. Likewise, it is not clear if any of the cases of distance delivered pre-service teacher education will be a permanent alternative option or short lived initiatives.

New types of partnerships were identified in the literature as an outcome of reforms and restructuring. Of the programs studied the OU (UK) PGCE provided a model of partnerships with schools and RATEP and POLO partnerships with communities. POLO and TEPL, as well as being partnerships, were also examples of the recognition of indigenous peoples and their languages and cultures (Trent, 1990).

Lawton had suggested that an outcome of difficulties in staffing rural areas could be attracting women in rural areas to teaching (Lawton, 1990). Examples of programs that strove to address this point were MMP and EDO.

The developed/underdeveloped status of a country generally appeared to be reflected in the length of programs and the level of entry qualifications sought although this is changing as is illustrated by moves in Kenya and Tanzania to place teacher education in universities and lengthen the programs. The Israeli academizing of teacher education was an example of moves to link research and teaching. These developments along with references to progress towards a continuum of practice that views teacher education as a lifelong process are all trends that the literature had pointed to (Clark, 1999; Darling-Hammond, 1999, 2000).

#### Limitations Relating to Finding Two

Given the centrality of field experience in the literature and its place as a universally recognized core element in pre-service teacher education programs it is interesting that field experience was so poorly reported on in the data provided by the programs studied. The reasons for this have to be speculated on. Is it because, in line with the centrality of field experience in the literature, it is simply accepted as a given? Is it because, for some programs, where the students were already teaching it wasn't considered an issue? Is it because, in a sense, while on field experience distance students are no different from conventional students and no new issues and challenges arise? Is it because the theory/practice links are not necessary?

Almost no information was provided about the placement of field experience within the programs, how it was linked to other content, or the packaging of the time devoted to the experience.

The likelihood of whether or not program planners within a university will be able to maintain a program focus remains unanswered. Whether such concerns also

apply within single focus institutions is also unclear. Given the emphasis in the literature on the importance of program these concerns need addressing.

Other points of limitation are intertwined with distance delivery. Developing the content of a pre-service teacher education program means direct links with material development. For pre-service teacher education it also means considering how practical elements of the program might be developed. Such considerations lead to a focus on distance delivered pre-service teacher education which is the focus of the final major section of this chapter.

#### Implications: Good Practice Recommendations

1. The field experience elements of a pre-service teacher education program need to be considered as systematically as any other of the content elements and their importance, placement and timing and the rationale for the decisions related to those aspects made clear to all the parties involved.
2. In each site of delivery the integration of the connective themes in pre-service teacher education needs to be the subject of debate and be a consideration in program planning and reviews.
3. The use of technology needs to be driven by the value it can add to teaching and delivery.
4. Tutors will need support to combine the focus of the profession with the focus of the academy.
5. Points of formal review should be built into the program to ensure systematic (and research based) reconsideration of the interplay of:

content elements; program values; the satisfaction of all stakeholders; and, the wider social climate the program sits within.

### Finding Three: Distance Delivered Pre-service Teacher Education Practice

The literature relating to distance delivered pre-service teacher education was the smallest of the literature fields that provided the conceptual framework for this study. The literature noted the increased use of distance education in teacher education, particularly in the developing countries where the introduction of universal primary education coupled with the impact of AIDS is having the effect of making the target of providing sufficient elementary teachers very difficult to achieve. Alternative means of producing more teachers without the capital expenses of providing new buildings has great appeal for the developing countries.

Examples of distance delivered pre-service teacher education provided in the literature, particularly by Perraton (1984; 1993; 1997; 2000a; 1997), served to demonstrate that there was reasonable agreement among those who have studied distance delivered pre-service education that it could be successfully employed and was a cost effective option.

#### Summary and Explanation

Of the three fields of literature that provided the conceptual framework for this work the field of distance delivered pre-service education was the least developed. The small body of literature tended to focus almost exclusively on questions of costs and effectiveness. It failed to address the intersection of practice between distance education and teacher education and thus to even raise the questions

that this particular area of practice should raise. It is then perhaps not entirely surprising that the programs studied also largely ignored what should be a central focus of their endeavors.

### Convergence with the Literature

Given that the literature base was small areas of convergence with the literature were also limited. With that limitation noted the intersection of practice focus is explored.

### Teaching

The growth of distance delivered pre-service teacher education, the moves towards universal primary education and the need to ensure that these forces did not detract from producing well educated teachers were points that were stressed in the literature (Nielsen, 1997; Perraton & Potashnik, 1997; Robinson, 1997). The latter point provides a focus on the teaching of programs and the success of the students. Programs appeared to be graduating students who met the same standards as students from conventional programs. While graduation rates were noted as one measure of success Robinson and Moon (2003) noted that other factors such as materials, assignment results and field experience reports were also indicators to be noted. All of these measures were also seen as measures of quality. On the evidence available from the data it appears that most programs monitor these indicators throughout program delivery and thus produce good quality students.

EDO and MMP were two programs where it was indicated that quality teaching and the specific needs of teacher education should be regarded as the prime

challenges rather than the systems of distance delivery. Keeping this focus on teaching and teacher education was regarded as a means of ensuring quality.

A teaching focused example of the intersection of teacher education and distance education can be seen when looking at the importance of interaction. The value of reflection and dialog was stressed in the teacher education literature and seen as a shared interactive process critical to becoming a successful teacher (Gore & Zeichner, 1995; Graves, 1990; Swanwick, 1990). Interaction was also highlighted in the distance education literature as being central (Moore, 1993). Moore indicated that the nature and extent of the interaction would be dictated by teaching philosophy and subject matter. This intersection of practice was well illustrated in EDO, MMP, OU (UK) PGCE and RATEP where there were program philosophies underpinning practice that were built on the belief that interaction between students, with tutors and with the ideas and experiences presented within the programs were critical to development as a teacher. These programs are all using computer-based technologies and are examples of initiatives that reflect some of the new developments that the literature indicated were likely to be seen. Their success is further evidence of the type Moore and Thompson (1997) pointed to when they indicated that new technologies were proving to be an effective means of teaching.

#### Field experience

There were clear warnings in the literature that any neglect of field experience could be the factor that would undermine any distance delivered pre-service teacher education program (Perraton, 2000a). Given the paucity of information on field experience from the programs studied this must be an area of major concern.

Teacher education and distance education intersect when field experience requirements need to be met. Field experience can in many ways be likened to an independent study time. That brings some special support considerations for students. However, the other two parties to field experience, the tutor and the associate or cooperating teacher also have support needs. Students are often in new situations and away from their usual forms of support, tutors often need special skills as they guide and assess students and associate teachers need preparation for their role. Assessing field experience and other practical aspects of a distance delivered pre-service teacher education program may require alternative and creative forms of assessment. The EDO provided an illustration of this when video-taped lessons and phone discussions were used. Supervision was difficult for many of the programs. ZINTEC had continuing problems maintaining an appropriate level of visiting on field experience. Other programs indicated the personnel that were involved but did not comment on the success or otherwise of the visiting.

### Quality

Many measures of quality have already been commented on through considering procedures for monitoring delivery and teacher education elements. The critical question raised by both Perraton (1993) and Nielsen (1997) of whether distance educated teachers are able to perform well in the classroom remains unanswered. However, Hon-Chan and Mukherjee's (2003) point that quality is linked to ensuring distance delivered programs are viewed as a regular part of teacher education provision and reflect the quality standards set by external bodies was well reflected. Several of the programs such as EDO, MMP, RATEP sat, within their

institutions, alongside conventional deliveries. The concept of parity of esteem (Visser, 1994) was well reflected in these programs. External standards, where they existed, were linked to program quality measures. The developed countries tended to have standards boards of some sort in place while the developing countries often used external evaluations or ministry of education guidelines as their benchmarks.

#### Institutional support

The cost effectiveness of distance delivered pre-service teacher education was noted (Perraton, 2000a; Robinson, 1997) and cost cutting was identified in the teacher education literature as a current concern. Prescott (2000) in the distance delivered teacher education literature noted that distance delivery was often explored by administrators as a possible cost saving measure. However, there was no evidence from the programs studied that cost saving was a driving factor. Cost was sometimes considered in terms of capital expenditure but seemed to be just one of the factors that were taken into consideration. Lockheed and Verspoor (1991) had called cost-effectiveness the primary advantage of distance delivered teacher education although they did agree that the advantage was often built on large student numbers. This was true for many of the programs studied particularly in Zimbabwe, Kenya, Nigeria, South Africa, Sudan, Tanzania, and England.

Developing sustainability and becoming institutionalized, presented as indicators of success by Perraton (2000a) and Robinson (1997) are institutional concerns. If programs cannot achieve these ends then they are unlikely to be successful for more than the very short term. Moving towards sustainability would seem to require the identification of 'space' in the system to accommodate a distance

delivered option. Several programs, OU (UK) PGCE, EDO, and MMP for example, showed that identifying a gap, rather than seeking to compete was critical to success. The planners of the NITEP program were also careful about this and identified 'space' for the 'intruder.' (Wrightson, 1998a, p. 18). Ultimately, a distance option needs to exist within the wider professional community, be accepted by that community and contribute to it. Linking to existing structures and utilizing skills and expertise that are already in place, demonstrated in EDO and NITEP, help to ensure institutionalization. Another indicator of institutionalization is the application of a distance model to other options within the institution. At Massey EDO has now led to Early Years and Secondary distance delivered teacher education options being available. However, exporting of models beyond the institution to other contexts comes with some cautions.

We are not sure that staff or institutions should necessarily try to reproduce the success of our programme. We developed a way of structuring an online environment that was a response to the pedagogical challenges that we faced. The challenges for teachers and learners in other disciplines may well be very different (Anderson & Simpson, 2000, p. 5).

#### National support

Support for programs of distance delivered pre-service teacher education is needed at national (and international) as well as institutional levels. Internationally, there is recognition of distance delivered pre-service teacher education through bodies such as the Commonwealth of Learning and the ICDE (International Council for

Distance Education) both of whom produce guidelines, fund research and development work and provide forums for researchers and practitioners to meet and exchange ideas. Some of these activities are also replicated within countries through national support organizations.

Costs and funding were identified by Perraton (2000a) as ongoing issues. Funding for programs generally illustrates, once again, the division between the developing and developed countries. IITT, TAC, NITEP and ZINTEC, all programs in developing countries, had funding from outside agencies. It is not known if they could operate without that support. Funding bodies have reporting requirements and may alter funding levels from year to year. IITT, NITEP and ZINTEC all had some difficulties managing outside funding. For programs in developed countries the decision to fund a program is an institutional one. There was no evidence from any of the programs in developed countries that any outside funding was involved.

Outside funding agencies and government departments may have limited understanding of distance delivered pre-service teacher education. Central bureaucracies can undermine elements essential to a pre-service teacher education program through lack of understanding. In Zimbabwe, Kenya, Sri Lanka and the Sudan this was illustrated.

#### Limitations Relating to Finding Three

There was very little evidence of institutions considering the relationship between the teacher education elements of a program and the demands of distance education. Indeed there were examples of fragmentation such as the contracting out of marking and field experience visiting. Given that these areas were recognized both

in the literature and in practice as vital pieces of a pre-service teacher education program this is somewhat surprising. Such actions raise concerns in terms of maintaining quality and providing inappropriate messages by separating off critical program components that should be integrated. Coupled with the concern noted previously that developing and maintaining a program focus within universities and maybe other tertiary institutions is likely to be problematic this is an area that needs monitoring. A well conceived program of distance delivered pre-service teacher education should serve as a model learning environment.

A focus on quality should always be important. The tendency has been to ask how effective a program has been. This is however, a fairly limited perspective which tends to focus us on ‘proof’ (outcomes) and comparisons. This presents real difficulties when the programs or the contexts they are set in are essentially not similar even although the profiles of the students may be – although in many cases this is not true either. A focus on the process of becoming a teacher and the interactive support that is needed would be likely to be more helpful. There was little discussion of how to teach the elements of a distance delivered pre-service teacher education program. The individual courses or papers within a program give the first contact with the lecturer’s voice. Courses need to maintain a focus on learning and be structured with this in mind. So first the pathways through a course need to be clear and the concepts or learning outcomes need to be a central focus of these pathways. Second, teaching strategies and activities need to guide students through the material. Third, assessment should inform the learning. Each course must develop the habits of self reflection. Research and scholarship should inform the courses. The rationale

for the program focus must also be clear and not give mixed messages. Although most programs have aspects of personal growth and development built into them some programs such as the Tanzanian example were specifically designed to increase the educational level of the students. This can have mixed results as “the emphasis placed on upgrading teachers to secondary education bears little relation to their roles as school teachers and practices and what goes on in the schools” (Wort, 1997, p. 148).

The field experience data did not supply enough information for informed discussion of this area. Reasons for this have already been speculated on. Further research and publication is needed.

Generally pre-service teacher education is a fulltime program of study. For some of the students in the programs studied their fulltime study included working as a teacher. However, although these students may be said to be part time students and part time teachers, their under qualified status means that they are in effect still students full time. Although many indicators of success in the programs have been reported and programs have worked hard to follow the guidance provided by distance education practice in providing support there appears to be very little known about what it is like to be a full time pre-service distance teacher education student.

#### Implications: Good Practice Recommendations

1. While there must be an understanding of both distance education and teacher education it is the intersection of these two fields that must be kept as a prime focus. Awareness of this connectedness and the consequences if the balance is weak or inadequate need to be fully understood.

2. Material development must draw on experience from distance education and content from teacher education but must model across all the discrete elements of the program package the programmatic and integrated theme links that are characteristic of the best pre-service teacher education programs.
3. Opportunities for reflective practice need to be promoted through the inclusion of focused dialog and interaction activities in all material irrespective of the media used in delivery.
4. Field experience needs to be clearly acknowledged and its enactment fully supported through links with all the parties who contribute to the experience.
5. The responsibilities of having fulltime distance teacher education students needs to be considered by program planners.
6. A pre-service teaching qualification earned through distance delivery must be assured equivalence with other modes of delivery.
7. Attaining sustainability and institutionalization should be seen as an outcome that needs to be planned for.
8. Reward systems that recognize distance teaching and research that supports and develops distance delivered pre-service teacher education need to be in place.

#### Recommendations for Further Research and Development

This study has highlighted many issues and challenges related to the distance delivery of pre-service teacher education and the initiatives program planners have taken in response. Through the research process a number of areas for further research and development have been identified. There is a need for:

1. Recognition and exploration of the tensions at the point of intersection of practice between distance education and its systems-based approach and teacher education and the core elements that need to be interwoven throughout a program.
2. Research based guidance that looks at the intersection between distance education and its systematic approach and the realities of students' life circumstances.
3. An exploration of field experience from the perspectives of all the parties involved – the students, the cooperating teachers and the institutions. This exploration should take as a starting place the ideals such as diversity, excellence, and, situations that provide challenge and opportunities for reflection that the literature proposed as essential and find how these ideals are matched in reality.
4. The students' point of view of the experience of becoming a teacher through a distance delivered program to be gathered.
5. Research into the success in the classroom of graduates from distance delivered pre-service teacher education programs.
6. Research of online delivery of pre-service teacher education. This was called for by several program developers. Topics such as the role of teachers and their language in CMC, how online student groups work, how does the nature of activities relate to participation, and, how to moderate and teach online all need attention.

7. Research that can provide specific exemplars of distance delivered pre-service teacher education programs in action. This research would examine how the thematic and connected aspects valued in the literature are enacted and give guidance on the types of materials and activities that have been proven to be valuable.

### Looking ahead

New systems of distance delivered pre-service teacher education based on the use of the new technologies seem to be emerging – Waikato, Massey and the Open University programs are examples. The new systems capitalize on the interaction and collaboration possible with new technologies and use these capabilities to develop, in particular, the core pre-service teacher education program elements of dialog and reflection. These new initiatives increase the similarity possible between on campus and distance options and it is possible that it is this that may make the distance options more acceptable to a wide range of decision makers. These new technology based initiatives, it would seem, do not necessarily have to be large scale. The models in this study seem able to provide more responsiveness than traditional distance delivery options and thus allow some move of focus from the provider and the need to standardize every aspect of the delivery to a greater degree of flexibility for the students and the faculty.

In conclusion, given the continued commitment in all countries, regardless of developmental status, towards the provision of quality primary education for all children and the increasing use of distance delivery, it is important that full comprehension of the special nature of distance delivered pre-service teacher

education continues to be built. This makes the call for deeper conceptual understanding and further research an important on-going challenge for teacher educators.

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Appendixes

Appendix A: Questions for critique

1. Is the study easy to read?
2. Does it fit together well and have a good structure?
3. Are the issues developed in a serious and scholarly way?
4. Is the conceptual background given appropriate?
5. Was the collection of data, as reported, appropriate, sufficient, and ethical?
6. Has the writer made sound assertions, neither over nor-under interpreting?
7. Do observations and interpretations appear to be well supported?
8. Are the conclusions reached sound and built on data?

Appendix B: An overview of the programs of distance delivered pre-service teacher education selected for this study.

Reference	Country	Institution	Level and type of qualification	Length of course	Number of students
(Open Learning Technology Corporation Limited, 1995)	Australia	James Cook University (and partners)	Bachelor of Education degree	4 years	In 1999 – 36 students
(Banks & Burgess, 1996)	England	Open University	Post Graduate Certificate in Education	Part-time for 18 months	Not known
(Thomas, 2000)	Guyana	A Ministry of Education project	Assistant Teachers Certificate	Four 26 week semesters minimum and up to 8 semesters maximum	112 in the project in 1999.

Reference	Country	Institution	Level and type of qualification	Length of course	Number of students
(Guri-Rozenbilt, 1992)	Israel	Open University and a group of Teacher Training Colleges	A teaching certificate and a Bachelor of Arts degree	4-5 years	Not known
(Kinyanjui, 1992)	Kenya	Institute of Education (with the School of Distance Studies, University of Nairobi)	Primary Teacher Certificate	3 years	3,000 on a three year cycle
(Sharpe, 1992)	Labrador	Memorial University of Newfoundland	A 2 year degree with teacher certification or a 5year baccalaureate degree	2-5 years	Not known

Reference	Country	Institution	Level and type of qualification	Length of course	Number of students
(Anderson & Simpson, 2002)	New Zealand	Massey University	Bachelor of Education(Tchg) degree	3 years	70-90 per year
(Delany & Wenmoth, 2001)	New Zealand	Christchurch College of Education	Bachelor of Teaching and Learning degree	3 years	30
(Hall, 1998)	New Zealand	Waikato University	Bachelor of Teaching degree	3 years	70 -90 per year
(International Centre for Distance Learning, n.d)	Nigeria	National Teachers Institute	Nigerian Certificate in Education	4 years	In 1996 – 31,000
(UNESCO Principal Regional Office for Asia and the Pacific, 1990)	Pakistan	Allama Iqbal Open University	Primary Teachers Certificate	Not known	Not Known

Reference	Country	Institution	Level and type of qualification	Length of course	Number of students
(Said, 1990)	Somalia	Institute of In-Service Teacher Training	Basic teacher qualification	Initially two years then a follow on four years	1988/89 - 1,700
(South African Institute for Distance Education, 1996b)	South Africa	College of Education	Basic primary teacher certificate	Not known	11, 664
(South African Institute for Distance Education, 1996a)	South Africa	College for Continuing Education	Primary Teacher Diploma	Not known	Not known
(Dharmadasa, 1996)	Sri Lanka	National Institute of Education	Trained Teachers Certificate	3-5 years	Not known

Reference	Country	Institution	Level and type of qualification	Length of course	Number of students
(Homeidan et al., 2000)	Sudan	Sudan Open Learning Organization	Initial teaching certificate	1 year	In 2000 – 7,100
(Chale, 1993)	Tanzania	Ministry of Education using regional centers	Qualification for teacher trainees at the lowest level of entry.	3 years	45,000 over three years
(UNESCO, 2000)	Thailand	Department of Teacher Training	Certificate in Education	Not known	Not known
(Wrightson, 1998a)	Uganda	Selected Primary Teachers Colleges	Primary Teacher Grade III	3 years	3, 128
(California State University, 2002a)	United States of America	California State University	California Preliminary Teaching Credential	18 months	By 2002 more than 800 had enrolled

Reference	Country	Institution	Level and type of qualification	Length of course	Number of students
(Zindi & Aucoin, 1995)	Zimbabwe	University of Zimbabwe (through Teachers Colleges)	Zimbabwe Certificate in Education	4 years	2,400 per year

## Appendix C: NVivo nodes –categories and subcategories of data

NVivo revision 1.2.142      Licensee: Mary Simpson

Project: Teacher distance education    User: Administrator    Date: 6/10/2002 - 9:24:48 p.m.

## NODE LISTING

1      (1) /Issues and challenges

Description:

These are the issues and challenges for distance delivered pre-service primary level teacher education as identified in the case studies.

2      (1 1) /Issues and challenges/Students

Description:

Issues and challenges that relate to students

3      (1 1 1) /Issues and challenges/Students/Field supervision

Description:

Issues and challenges related to supervision in the field.

4      (1 1 2) /Issues and challenges/Students/Support in the field

Description:

Issues and challenges related to support for the students while they are in the field.

5      (1 1 3) /Issues and challenges/Students/Supervision during

independent study

Description:

Issues and challenges related to supervision during independent study times in the program.

6      (1 1 4) /Issues and challenges/Students/Support during independent

study

Description:

Issues and challenges related to support students need during independent study times in the program.

7      (1 2) /Issues and challenges/Assignments

Description:

8      (1 3) /Issues and challenges/Tutors

Description:

Issues and challenges that relate to tutors and lecturers - all those who teach in the program.

- 9 (1 3 1) /Issues and challenges/Tutors/Local  
Description:  
Issues and challenges related to the work and role of local tutors.
- 10 (1 3 2) /Issues and challenges/Tutors/Field experience  
Description:  
Issues and challenges related to the use and role of field experience tutors.
- 11 (1 3 3) /Issues and challenges/Tutors/Institutional  
Description:  
Issues and challenges related to the use and work of institutional based tutors.
- 12 (1 3 4) /Issues and challenges/Tutors/Supervision  
Description:  
Issues and challenges related to supervision of all types of tutors.
- 13 (1 3 5) /Issues and challenges/Tutors/Retention  
Description:  
Issues and challenges related to the retention of all types of tutors.
- 14 (1 3 6) /Issues and challenges/Tutors/Qualifications  
Description:  
Issues and challenges related to the qualifications and experience all types of tutors need.
- 15 (1 4) /Issues and challenges/Material  
Description:  
Issues and challenges that relate to the material in the program.
- 16 (1 4 1) /Issues and challenges/Material/Delivery-distribution  
Description:  
Issues and challenges related to the delivery and distribution of program material.
- 17 (1 4 2) /Issues and challenges/Material/Preparation-writing  
Description:  
Issues and challenges related to the preparation and writing of program materials.
- 18 (1 4 3) /Issues and challenges/Material/Media choice  
Description:  
Issues and challenges related to the choice of media for delivery of program content and organizational matters.
- 19 (1 5) /Issues and challenges/Geographical  
Description:  
Issues and challenges that relate to geographical and related infrastructure factors.

- 20 (1 5 2) /Issues and challenges/Geographical/Communications superstructure  
Description:  
Issues and challenges related to the communications super structure of the country.
- 21 (1 5 3) /Issues and challenges/Geographical/Climate  
Description:  
Issues and challenges the climatic conditions of the country create that then impinge on program delivery.
- 22 (1 5 4) /Issues and challenges/Geographical/Utilities superstructure  
Description:  
Issues and challenges related to utilities such as electricity.
- 23 (1 6) /Issues and challenges/Systemic support  
Description:  
Issues and challenges that relate to the systems approach of distance education.
- 24 (1 6 1) /Issues and challenges/Systemic support/Understanding special nature - DE  
Description:  
Issues and challenges related to the special nature of distance education.
- 25 (1 6 2) /Issues and challenges/Systemic support/Material tracking  
Description:  
Issues and challenges related to the way distance education material needs to be tracked and monitored.
- 26 (1 6 3) /Issues and challenges/Systemic support/Library resources  
Description:  
Issues and challenges related to the provision of library resources and support.
- 27 (1 6 4) /Issues and challenges/Systemic support/Planned integrated structures  
Description:  
Issues and challenges related to the need for distance delivery to be integrated and planned.
- 28 (1 7) /Issues and challenges/Institutional support  
Description:  
Issues and challenges that relate to the need for institutional support or identify particular kinds of institutional support needed.
- 29 (1 7 1) /Issues and challenges/Institutional support/Workloads  
Description:  
Issues and challenges related to workload issues for staff.

30 (1 7 2) /Issues and challenges/Institutional support/Resourcing and funding

Description:

Issues and challenges related to institutional funding and resourcing.

31 (1 8) /Issues and challenges/Evaluation and assessment

Description:

Issues and challenges that relate to evaluation and assessment.

32 (1 8 1) /Issues and challenges/Evaluation and assessment/Prompt feedback

Description:

Issues and challenges related to the need for prompt feedback to students.

33 (1 8 2) /Issues and challenges/Evaluation and assessment/Quality improvement

Description:

Issues and challenges related to the improvement of the quality of the program through assessment evaluation.

34 (1 8 3) /Issues and challenges/Evaluation and assessment/Pedagogical and theoretical links

Description:

Issues and challenges related to teaching and theory concerns.

35 (1 8 4) /Issues and challenges/Evaluation and assessment/Balancing program elements

Description:

Issues and challenges related to the balance and interplay of the content elements in a program.

36 (1 8 5) /Issues and challenges/Evaluation and assessment/Linking program elements

Description:

Issues and challenges related to the need to link program elements.

37 (1 8 6) /Issues and challenges/Evaluation and assessment/Length of program

Description:

Issues and challenges related to the length of a program.

38 (1 9) /Issues and challenges/National support

Description:

Issues and challenges that relate to or indicate the need for national level support.

39 (1 9 1) /Issues and challenges/National support/Understanding of distance education

Description:

Issues and challenges that relate to the need for there to be understanding, at a national level, of the special needs and nature of distance education.

40 (1 9 2) /Issues and challenges/National support/Resourcing and funding

Description:

Issues and challenges related to national level resourcing and funding.

41 (1 10) /Issues and challenges/Economies of scale

Description:

Issues and challenges that comment on the concept of economies of scale.

42 (1 11) /Issues and challenges/Field experience

Description:

Issues and challenges identified that relate to the field experience component of a program.

43 (1 11 1) /Issues and challenges/Field experience/Unsuitable schools

Description:

Issues and challenges related to schools not suitable for field experience.

44 (1 11 2) /Issues and challenges/Field experience/Maintenance

Description:

Issues and challenges related to maintaining and supporting field experience.

45 (1 11 3) /Issues and challenges/Field experience/Supervision

Description:

Issues and challenges related to the supervision of field experience.

46 (1 12) /Issues and challenges/Selection of students

Description:

Issues and challenges that relate to the selection and recruitment of students to enter the program.

47 (1 13) /Issues and challenges/Parity of qualification

Description:

Issues and challenges related to acceptance of a distance delivered program as equivalent to traditionally delivered programs.

48 (1 14) /Issues and challenges/Political

Description:

Issues and challenges that relate to the national level political climate or situation in a country and how it may impact on a program.

49 (1 14 1) /Issues and challenges/Political/Unstable government

Description:

Issues and challenges related to the impact an unstable government can have on a program.

50 (1 14 2) /Issues and challenges/Political/Developmental status of a country

Description:

Issues and challenges the developmental status of a country can have on a program.

51 (1 14 3) /Issues and challenges/Political/Bureaucratic

Description:

Issues and challenges related to political and bureaucratic concerns.

52 (1 15) /Issues and challenges/Facilities

Description:

Issues and challenges that relate to facilities needed for distance delivery of a program.

53 (1 16) /Issues and challenges/Teaching

Description:

Issues and challenges that relate to pedagogical issues.

54 (1 17) /Issues and challenges/Staff development

## Appendix D: List of program names and abbreviations

Australia	Remote Area Teacher Programme	RATEP
England	Post Graduate Certificate in Education	OU (UK) PGCE
Guyana	Guyana In-Service Distance Education	GUIDE
Israel	Open University Israel/Teachers Colleges	OUI
Kenya	Kenya Institute of Education	KIE
Labrador	Teacher Education Program in Labrador	TEPL
New Zealand (Massey)	External Delivery Option	EDO
New Zealand (Waikato)	Mixed Media Programme	MMP
New Zealand (Christchurch)	Primary Open Learning Option	POLO
Nigeria	National Teachers Institute	NTI
Pakistan	Primary Teachers Certificate	
Somalia	Institute of In-Service Teacher Training	IITT
South Africa	The College of Education in South Africa	CESA
South Africa	The College for Continuing Education	CCE
Sri Lanka	Trained Teachers Certificate	
Sudan	Teacher Assistance Course	TAC
Tanzania	Teacher Training at a Distance	TTD
Thailand	In-service Teacher Training Division	ISTTD
Uganda	Northern Integrated Teacher Education Program	NITEP
United States of America	California State University Teacher Credential	CalStateTEACH
Zimbabwe	Zimbabwe Integrated National Teacher Course	ZINTEC

## Vita - Mary. G. Simpson

**Current position:** Senior Lecturer, College of Education, Massey University, New Zealand.

**Awards:**

1997 Distance Education Association of New Zealand (DEANZ) Award.

2000 – 2001 Massey University Pro Vice-Chancellor's International Doctoral Fellowship

**Recent publications:**

Askov, E.N and **Simpson, M.G** (in press). In-depth study of a graduate course on Penn State's World Campus. The Quarterly Review of Distance Education.

**Simpson, M.G** (2002) Speaking personally – an interview with Von V. Pittman. The American Journal of Distance Education, 16(2), 115-123.

Anderson, B and **Simpson, M. G.** (2002). Distance education in New Zealand: A case study from Massey University. In V.V. Reddy & M. Srivastava (Eds.), Towards virtualization: Open and distance learning. New Delhi: Kogan Page.

Askov, E.N and **Simpson, M.G** (2001) Exploring distance learning in literacy instruction: Offering multiple perspectives in the millennium. In G.B.Moorman and W.R.Trathen (eds) Multiple Perspectives in the Millennium, Yearbook of the American Reading Forum, 21, 195-210.

Askov, E. N and **Simpson, M.G.** (2001) Researching distance education: Penn State's online adult education M.Ed. degree on the World Campus. Australian Vocational Training Research Association (AVETRA) proceedings, Adelaide, South Australia.

Anderson, B. and **Simpson, M. G.** (1998). Learning teaching at a distance – a social affair. Computers in New Zealand Schools, 10(1), 17 - 23.

**Recent conference papers/Presentations:**

**Simpson, M.G** (2002, July). Managing the field experience in distance delivered teacher education programmes. Paper presented at the 2<sup>nd</sup> Pan-Commonwealth Conference held in Durban, South Africa.

Anderson, B and **Simpson, M.G** (2002, July). Five years on: Institutional lessons learnt in the distance delivery of a primary pre-service teacher education programme. Paper presented at the 2<sup>nd</sup> Pan-Commonwealth Conference held in Durban, South Africa.

**Simpson, M.G** (2002) Support for distance students. Address to teacher aide tutors at their professional development day 15 June held at Massey University College of Education.

**Simpson, M.G** and Anderson, B (2002, June) Distance education and teacher education: Principles for implementation and assurance in teaching and learning. Keynote contribution at the Flexible Learning in Teacher Education Forum of the New Zealand Teachers Council held in Wellington.

**Simpson, M.G.** (2002, April) The use of CMC in preparing and supporting primary pre-service teacher education students for their field experience in a distance delivered teacher education programme. Paper presented at Distance Education Association Of New Zealand conference held in Wellington.

Anderson, B and **Simpson, M.G.** (2001, November) Distance-delivered teacher education in New Zealand. Paper presented at the 9<sup>th</sup> Annual National Conference of the American Association for Collegiate Independent Study (AACIS) held in Athens, Ohio.

**Simpson, M.G** and Anderson, B. (2000, April) A social affair: On-line structures to support a distance teacher education degree. Paper presented at the Eighth Annual Teaching and Learning with Technology Symposium at The Pennsylvania State University.

**Simpson, M.G** and Anderson, B (2000, March) Online interaction in a distance teacher education programme. Paper presented at the second regional Adult Education Research Conference held at State College, Pennsylvania.

Anderson, B and **Simpson, M.G.** (2000, May) A case study in online teacher education. Peer reviewed case study presented at the International e-Workshop held at Heriot-Watt University Scotland.

**Simpson, M.G.** (1998) Student Support in an Online Environment. Paper presented at Distance Education Association of New Zealand Conference held in Rotorua.

Anderson, B and **Simpson, M.G.** (1998) Challenges and Issues in Developing Online Courses. A workshop presented at Distance Education Association of New Zealand conference held in Rotorua.