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A VIRTUAL COMMUNITY OF PRACTICE APPROACH TO TEACHER PROFESSIONAL DEVELOPMENT AND LEARNING

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Abstract

Research over a long period has suggested that professional development and learning for teachers often produces disappointing results. Recent theory suggests that teacher professional learning presented within a situated learning and community of practice framework is likely to be more effective than the more traditional forms of in-service professional development and learning. Further, recent technological developments since the mid 1990s have created increasingly sophisticated means of bringing widely distributed learners together, within flexible timeframe, online (virtual) discussion communities. This study set out to develop a workable approach to teacher professional development and learning (TPDL), using situated learning and community of practice learning theory and the opportunities afforded by Web 2 virtual learning environments. The literatures of learning theory, teacher professional development and communities of practice were reviewed and best practice principles identified. These principles were then used to design a virtual community of practice (VCoP) approach to teacher professional development and learning. The approach was then implemented as the underpinning framework for three virtual professional development modules for secondary school Geography and Social Studies teachers.

The study used a grounded theory and action learning action research methodology, which enabled the researcher and the research participants to evaluate and fine tune the approach throughout the study. A mixed method research design resulted in the collection of rich quantitative and qualitative data during each module. Naturalistic data were drawn from the online module record and from semi-structured focus group discussions. More structured and reflective data were collected through a final post-module evaluative questionnaire. The data collected were analysed using a range of techniques, including narrative analysis, structural analysis, semantic analysis, and domain analysis. The results of these analyses are presented from three contrasting perspectives: a structural analysis narrative of each module (Chapter 5), a content and personal case study narrative of selected participants (Chapter 6), and a qualitative and quantitative analysis of a final post module reflective survey (Chapter 7).

The main findings of the study were that an ongoing virtual community of practice approach appears to be a viable and effective form of TPDL, under certain conditions.

Grounded action learning action research experiences indicated that a meso-scale VCoP experience of between 12 to 15 weeks was an optimal timeframe. Reading and discussion requirements also needed to be carefully judged in order to ensure VCoP modules did enough to be challenging, yet remain manageable for busy classroom teachers. Features of the approach found to be very effective included the mix of activities used including, reading key literature, discussing ideas, sharing activities and experiences, flexible use of time, quality facilitation, and the situated nature of the approach. Features of the approach identified as requiring further refinement included improvements to the module website and maintaining a satisfactory level of contribution across all participants.

The concluding discussion found that while 'classic' VCoPs have proven to be effective in business there are very few examples of similar success in the field of TPDL. This study found that VCoPs can be effective for teachers but only when the classic model of VCoP is adapted to ensure VCoPs are manageable for, and tailored to, the nature of teachers' working lives. The study concludes by considering the research in a wider context and considering the implications of the findings for further research and development.

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Acronym	Full term	Definition/Discussion Page
ALAR	Action learning action research	57
CAL	Community approaches to learning	33
CoK	Community of knowers	36
CoL	Community of inquiry	33
CoP	Community of practice	38
ERI	Extra resources and information	101
GP	Geographical perspectives module (1st study module) 103	
HOD	Head of Department	3
ICT	Information and communication technologies	6
IDS	Interactive dialogue statement	79
LMS	Learning management system	97
MDDA	Monologue and dialogue discussion analysis	78
MQR	MDDA quality rating	78
NCEA	National Certificate of Educational Achievement	15
ERO	New Zealand Education Review Office	2
NZMoE	New Zealand Ministry of Education	1
NZQA	New Zealand Qualifications Authority	1
PFC	Philosophy for children	34
PMS	Personal monologue statement	79
SSNZC	Social Studies in the New Zealand Curriculum	1
SPP	Social, professional, personal	26
SSSBSP	Senior Social Studies Beacon Schools Project	69
TKI	Te Kete Ipurangi (NZMoE Online Learning Centre)	47
TPDL	Teacher professional development and learning	25
VCoP	Virtual community of practice	43
VEP1	Values exploration process module one (2nd study module)	116
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Chapter One – Introduction

Genesis of the study

Recent changes and developments within the Social Science disciplines, and in education, have seen the introduction of new and challenging elements within school Geography and Social Studies curricula and assessment frameworks. In particular, new curriculum and assessment requirements to study perspectives and values introduced over the last decade mean Social Science teachers are obliged to address these elements in their classroom teaching (New Zealand Ministry of Education (NZMoE), 1997; New Zealand Qualifications Authority (NZQA), 2002; NZMoE, 2007).

Values have been a long standing aspect of New Zealand Social Science education (New Zealand Department of Education, 1978; NZMoE, 1990; NZMoE, 1993). In *Social Studies in the New Zealand Curriculum* (SSNZC) values are defined as "a person's principles or standards: judgements of what is important and valuable in life" (NZMoE, 1997, p. 58). *SSNZC* was the first Social Science curriculum document to formally mandate values exploration as a compulsory requirement and to spell out in some detail how values were to be addressed in the curriculum. A mandated achievement objective for values exploration stated that "students will demonstrate skills as they explore and analyse values" (p. 52-55). The values exploration process is further explained in SSNZC as involving students in:

- examining and clarifying their own values
- examining, clarifying and critiquing the values positions of others in relation to social issues
- examining the collective values upon which social structures and systems are based
- developing an understanding of values conflict and attempts to seek agreement on underlying values
- developing an understanding that values are formed by many influences and that they may change over time
- reflecting on their findings and their own position, and re-evaluating their own values and collective social values in light of this

(NZMoE, 1997, p. 17)

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The concept of perspective is more recent. In the New Zealand curriculum this concept was first introduced in SSNZC, where specific bicultural, multicultural, gender and future perspectives were explained (NZMoE, 1997, p. 21-22). However, the term "perspective" was not defined in SSNZC. Nevertheless the concept of perspectives soon became regarded as important in other Social Sciences, including Geography. A Perspectives Statement developed by the NZQA for the Geography achievement standards defined perspectives as:

> [P]articular bodies of thought or sets of organised ideas, not any one person's views, but an aggregate of ideas built up over decades or even centuries. A particular set of ideas that tend to take us in a particular direction, built on the same foundational ideas and requiring us to think in particular kinds of ways.
>
> (NZQA, 2002)

The New Zealand Geography educator, Francis Slater (1993), called perspectives ideologies, or world views, and explained the idea more simply. She describes ideologies (or perspectives) as ... "bundles of beliefs, opinions, attitudes, values and preferences that people hold together. They explain a lot about how people act and behave," (p. 123).

Values and perspectives are widely acknowledged as difficult and challenging areas for teachers. International studies have shown that while teachers acknowledge the importance of including the study of values and perspectives in classroom programmes, they are ill-equipped to meet the challenge and are uncertain about how to work with values and perspectives in a classroom context (Powney, Cullen, Schlapp, Glissov, Johnstone & Munn, 1995; Stevenson, Ling, Burman & Cooper, 1998) . Local commentators have identified similar issues for New Zealand Social Science teachers (Keown, McGee & Carstensen, 1998; Hunter, 1999). Thus there is a need to find ways of assisting teachers to better understand these new aspects of curriculum and gain confidence in working with them.

Recent work on teacher development suggests that this requires the implementation of not only the traditional information and skill development-based professional development, but also the inclusion of significant personal and social development dimensions (Bell & Gilbert, 1996; Putnam & Borko, 1997; Education Review Office [ERO], 2000; Timperley, Wilson, Barrar & Fung, 2007). These and other similar research findings also suggest that teacher development takes time and is most effective when the process is on-going over a relatively

substantial time period (Putnam & Borko, 1997; Binko, Neubert & Madden, 1997; Englert & Barley, 2003; Day & Sachs, 2004). This work resonates with the growing interest in the importance of community in effective learning and practice (Schlager, Fusco & Schank, 2002; Schlager & Fusco, 2003; Gray & Tatar, 2004).

However, the logistic and financial constraints related to delivering high quality ongoing professional development face-to-face are considerable (Binko, Neubert & Madden, 1997; Englert & Barley, 2003). Successful programmes often involve freeing teachers from the classroom for extended periods, the employment of full-time professional developers, and for some programmes considerable travel and accommodation costs in drawing teachers together in one place. Recent developments in virtual discussion communities (sometimes termed "online" or "web-based"), appear to have the potential to offer an easier and less expensive way of achieving high quality professional development for teachers (Johnson, 2001; Barnett, 2002). Teachers do not have to be released from classes or travel to other places. They can complete virtual teacher development in non-teaching periods at school, or before or after school, or at home. Virtual community developers in such programmes can similarly work flexibly and part-time rather than full-time, if supported to do so by release from some other duties.

I have a long standing interest in the development of the Social Science disciplines, curriculum development and the professional development and learning of teachers. This interest has been expressed in my work as a Head of Department (HoD) of secondary school Geography and Social Studies, as an advisor for secondary school Geography and Social Studies and a tertiary teacher educator in secondary school Geography and Social Studies. I have also made a significant contribution to Geography and Social Studies professional associations and to curriculum development at national, regional and local levels. While my initial work in professional development for teachers employed conventional face-to-face approaches, since the mid 1990s I have used virtual techniques for teacher development and learning in both pre-service and in-service teacher education. At the same time I have developed a strong interest in community-based approaches in education including: communities of inquiry (Lipman, Sharp & Oscanyan, 1980; Sharp, 1987; Lipman, 1991); communities of learners (Brown & Campoine, 1994); dialogue-based learning (Vella, 1994); and communities of practice (Lave & Wenger, 1991; Wenger, 1998; Wenger, McDermott & Snyder, 2002; Saint-Onge & Wallace, 2003).

My experience in secondary school teaching and in teacher education, along with ongoing reading and research, suggests that achieving effective professional learning and development for practising teachers remains problematic (ERO, 2000; Bednarz, 2003). Current approaches to professional development appear to be either, too brief and shallow to effect real change in teacher understanding and practice, or too elaborate and too expensive to be manageable and affordable (Binko, Neubert & Madden, 1997; Lee, 2000; Englert & Barley, 2003; Kwakman, 2003). This suggests there is a need for a third way; a medium (or meso) scale type of professional development between these two existing approaches. I am of the view that a virtual community of practice style approach to professional development could offer a way to achieve this.

Two terms need to be addressed briefly at this point. This study centres on an *approach* to teacher professional development. The word approach is used in this study in the sense of "a way of considering or handling something" (Simpson & Weiner, 1989, p. 584) or "a means adopted in tackling a problem" (Makins, 1991, p. 73). In this study the approach is the overall means or way of handling the problem or issue of providing teacher professional development and learning (TPDL) using virtual communities of practice (VCoPs). The study also addresses the issue or problem of TPDL at a particular scale. The *meso-scale* is a middle point on a time, complexity and resource continuum. In other words, it is not a short term, inexpensive and shallow one or two day approach to professional development. Nor is it large scale, highly expensive, highly complex approach such as a tertiary post-graduate paper or a large scale experimental programme. It is midway between these extremes.

The significance of a VCoP approach to TPDL

This study investigates how best to achieve a relatively low cost, yet effective form of teacher development. A form of TPDL that is capable of addressing the considerable challenges involved in assisting teachers to implement complex new curriculum and assessment requirements, such as those involving perspectives and values exploration. An approach to TPDL that will influence teacher thinking and values to the extent that changes in practice will follow. This is acknowledged as difficult to achieve (Cohen, 1988; Hargreaves & Fullan, 1992; Yero, 2002).

A study which seeks to provide in-depth research into a practical and cost-effective means of helping teachers address the challenges and changes in a way that enables teachers to understand issues at depth and change their pedagogy and practices accordingly, has the potential to make a significant contribution to educational thought and practice. If a successful VCoP approach to TPDL can be developed and delivered, it could result in a tool capable of achieving much more effective professional development for a much greater number of teachers than is possible through current approaches. This study investigates the proposition that a meso-scale virtual community of practice-based approach to teacher development, with the attributes outlined above, can be developed and delivered.

A virtual community of practice approach to teacher development and learning also has considerable potential to contribute to three other important areas in current education. Firstly, there is a concerted effort underway to address pedagogy in New Zealand teaching (Mallard, 2003; NZMoE, 2005; NZMoE, 2007). Recent theory and research suggest that the way teachers teach is of vital importance in achieving successful learning (Bishop, Berryman, Tiakiwai & Richardson, 2003; Timperley, Wilson, Barrar & Fung, 2007). It further suggests that quality relationships, social factors and community approaches to learning are important in gaining good educational outcomes. Teachers need to become facilitators, enablers and dialogue leaders (Bishop & Glynne, 1998; Bishop, Berryman, Tiakiwai, & Richardson, 2003; Timperley et al., 2007; Kalantzis & Cope, 2008). This community of learner style of approach is, in essence, a classroom-based, teacher to student equivalent of a community of practice (a teacher to teacher learning community). I argue that the VCoP approach to TPDL can provide teachers with a practical experience of the preferred pedagogy for the 21st century. As teachers take part in a VCoP they act as community-centred learners. At the same time learning they are about what it is to become a community of learner style of teacher.

Second, there is a concern that in a world increasingly shaped by rapidly developing electronic technologies, schools need to prepare students for the digital age in a knowledge-based society (Mallard, 2003; NZMoE, 2005; NZMoE, 2007; Kalantzis & Cope, 2008). This challenges schools and teachers to develop information and communication technology (ICT) knowledge and skills. Experience as an e-learner in a VCoP e-based professional learning environment will help develop e-teachers (Keown, 2004).

Third, recently developed professional standards require teachers to commit time and effort to professional development (New Zealand Ministry of Education, 1999; New Zealand Teachers Council, 2007). A workable approach to virtual professional development could help teachers keep up to date, develop their knowledge and skills, and demonstrate that they are achieving the standards requirements for on-going professional development.

Educational commentators have noted that on-going and in-depth professional development is critical in achieving the intent of recent educational reform and curriculum change (Dadds, 1997; Campbell, Yates & McGee, 2001; Garet, Porter, Desimone & Birman, 2001; Eaker, DuFour & DuFour, 2002). However, it is also clear that professional development of this type, on a scale that can meaningfully address the knowledge, values and practices of large numbers of teachers is relatively rare (Lee, 2000; Sandholtz, 2002; Schlager, Fusco & Schank, 2002; Kwakman, 2003; Schlager & Fusco, 2003). This study does not set out to provide all the answers on these difficult questions and issues, but aims to explore the potential evident in the VCoP approach to TPDL and its impact on teachers, with a view to evaluating possible future implications for teaching and learning.

What are the issues?

The central issue for this research is whether or not a strong, mid (or meso) scale virtual community of practice approach can be developed and delivered in a way that achieves deep learning for teachers (Chapman, Ramondt & Smiley, 2005). Chapman et al. define strong community as going beyond personal and community reporting, information sharing and questioning; to agreeing and disagreeing, engaging in discourse and taking ownership. They describe deep learning in similar terms but with the deeper levels including exploring issues, developing insight and proposing new actions (Chapman et al., 2005, p. 227). The brief review above, and more detailed argument in Chapter 2, suggests such TPDL needs to be much more substantial than the conventional one or two day 'inoculation' model frequently used in teacher profession development in New Zealand. On the other hand, the TPDL also need to be much shorter, less demanding and less expensive than summer school, master's paper and major big budget project approaches. In other words, a meso-scale approach at a mid-range point in terms of; the duration of the ongoing professional development experience; the complexity of the resources and activities within the experience; the

individual effort required from participants to complete the experience; and the overall expense of developing and operating the experience.

However, developing such an approach in a way that could meet the criteria of quality professional development identified in literature is a considerable challenge. This study aims to find out if it is possible to develop an approach that will provoke the deeper thinking that Bell and Gilbert, (1996), Chapman et al., (2005), and many others, see as fundamental in enabling underpinning reasons, purposes, and assumptions to be addressed while at the same time remaining compatible with the practical constraints of school and classroom life.

Existing knowledge on this issue

There is clear and compelling evidence to suggest that most existing professional development is brief, shallow, imposed and relatively ineffective (Lee, 2000; Kwakman, 2003; Sandholtz, 2003; Bednarz, 2003). On the other hand, there is also strong evidence to show that on-going, in-depth professional development embedded in school and teaching cultures does exist, and can be very effective in achieving deep and authentic learning for teachers (Bell & Gilbert, 1996; Binko, Neubert & Madden, 1997; Englert & Barley, 2003; Day & Sachs, 2004). Such programmes are becoming more common, but descriptions of them suggest that they are financially expensive and demanding in terms of time and effort. As a result such models and approaches are not likely to be available to most teachers.

The potential of virtual technologies as a medium for on-going, in-depth and teacher-centred professional development at a reasonable cost has been known for some time (Chalmers, Keown, Peace & Morris, 1998; Dowling & St Louis, 2000; Schlager, Fusco & Schank, 2002; Tubin & Chen, 2002; Whitehouse, Breit, McCloskey, Ketelhut & Dede, 2006). Similarly, it has been found that a community and dialogue-based approach to TPDL is more effective than the traditional expert-apprentice and information transmission models in producing changes in teachers' thinking and practice (Bell & Gilbert, 1996; Putnam & Borko, 1997; ERO, 2000; Timperley et al., 2007). Further, research shows that the community of practice model developed by Lave and Wenger is a very effective way of establishing such communities (Mitchell & Young, 2002; Schlager, Fusco & Schank, 2002).

Communities of practice are now relatively common in the business and commercial world (Wenger, 1998; Wenger et al., 2002; Saint-Onge & Wallace, 2003) where they are often seen as a means of engaging with the knowledge wave, developing knowledge workers, and as creating knowledge oriented work places (Hayes & Walsham, 2001). VCoPs are also becoming more common as a means of professional development for teachers (White, 2002; Renninger & Shumar, 2002; Schlager, Fusco & Schank, 2002; Whitehouse, Breit, McCloskey, Ketelhut & Dede, 2006). In particular, there is abundant evidence that VCoP approaches can work well where teachers are enrolled in university papers (Campbell, Yates & McGee, 2001; Wu & Hiltz, 2003). Some successful large-scale big budget VCoPs have also been reported in the literature (Schlager, Fusco & Schank, 2002; Whitehouse et al., 2006; Wing-Lai, Pratt, Anderson & Stigler, 2006).

However, there is also research evidence to suggest that ICT in general, and VCoPs specifically, are not developing in the education sector at the rate initially hoped for (ERO, 2000b; Morris, 2003; Ruthven & Brindle, 2005; Haydon & Barton, 2007). In-spite of the successful record of tertiary and big budget teacher VCoPs, large numbers of classroom teachers remain relatively untouched by such developments. Thus commentators often see much current VCoP work as 'bolt on', and not currently integral and embedded in the life and culture of schools and teacher groups (Garet, Porter, Desimone & Birman, 2001; Sandholtz, 2002; Schlager, Fusco & Schank 2002; Ertmer, P. 2005).

What is not known?

What is not known at the moment is whether some form of meso-scale TPDL using a VCoP approach is workable and achievable for classroom teachers. That is, can a range of classroom teachers in schools (as opposed to those involved in online enthusiast sites, enrolled in tertiary papers for qualifications, and participants in expensive bolt-on programmes), be engaged in an effective VCoP professional development experience? Further, if such an approach is viable and practical, can it achieve in-depth learning and understanding sufficient to address teacher assumptions, values and beliefs in a way that will result in changed practice?

There are a number of further unknowns associated with these questions. Given the less than impressive adoption rate for ICT and online learning by classroom teachers (Mumtaz, 2000; Hennessy, Ruthven & Brindle, 2005; Haydon & Barton, 2007), what kinds of practical strategies and approaches might help teachers adopt and use virtual learning and ICT more effectively? There are some suggestions that VCoPs need to be better integrated into the working life of teachers (Schlager, Fusco & Schank, 2002). Given the current predominance of brief and shallow TPDL it is highly likely that many teachers do not have the knowledge, experience and skills involved in working as a community of inquirers and practitioners. Teachers may, if they have a chance to experience it, find that a VCoP approach is a much more effective form of professional development than the shallow and imposed models that currently predominate. On the other hand some suggest VCoP approaches to TPDL are unproven or even likely to be very unsatisfying (Barab, Kling & Gray, 2004; Barab, MaKinster, Moore & Cunningham, 2001). Grounded research on a robust approach to TPDL using scaffolded and supported VCoPs will cast light onto these questions and issues.

International and New Zealand engagement with the issues

There is now a large and rapidly growing literature on communities of practice, and virtual professional development. Collections such as Renninger & Shumar (2002), Barab, Kling & Gray (2004) and Dede (2006) illustrate the breadth and depth of this international work. However, Barab et al. (2004) note:

Although the internet offers much promise and the potential to support new environments for learning, we are just beginning to understand the educational potential of community models for learning and whether community can be designed virtual or face-to-face. In fact, we know very little about whether something such as a community can be designed and, if so, whether this can be done virtually. We are witnessing instructional designers employing usability strategies effective for understanding human-computer interactions, but we have little appreciation of how to design to facilitate sociability - that is, supporting human-human interactions as mediated by technology.

(Barab et al., 2004, p. xvii)

In other words, while there is considerable research work completed and underway in the field of virtual, on-going and in-depth professional development, there are still many unknowns. A number of curriculum centred projects do have a strong VCoP focus. Examples are The Math Forum (Renninger & Shumar, 2002), The Earth and Space Science Tapped-In Project (Schlager, Fusco & Schank, 2002) and The Web-Based Integrated Science Environment Project (Cuthbert, Clark & Linn, 2002).

However, a number of researchers consider that the extent to which VCoPs are able to develop a realistic sense of community is not yet established (Schlager, Fusco & Schank, 2002; Barab et al., 2004). They suggest that there is, as yet, no clear evidence about how to design an approach for VCoPs that develops genuine human-to-human relationships. My experience in working with teachers suggests that learners (school students or teachers) are able to adopt a community style of learning within a short time frame, in order to achieve an agreed learning goal. Further, my work in the field suggests that that developing and running such communities requires carefully judged and persistent facilitation. This study expects to be able to shed further light on these vital but as yet unproven aspects of virtual communities in education.

Extensive literature searching such as that in Chapter 2 and that conducted by Wing-Lai et al., (2006), suggests that there is very little New Zealand research focused directly on the issues addressed in this study. There is a considerable amount of research and writing on the use of VCoPs in the tertiary sector and in business (Eduforge, 2005; NZMoE e-learn portal, 2005). However, most of this work does not relate to the professional development of teachers.

There are a number of New Zealand studies which report on various aspects of teachers' use of the internet (ERO, 2000; Davey, 2001; Ham & Wenmoth, 2002; Johnston, Kazakov & Svehla, 2005). Similarly there are a number of research articles that utilize the concept of CoP as a way of encouraging collaborative and distributed learning approaches in the professional development of teachers (Carr, 2000; Compton & Harwood, 2003; Banks, Barlex, Jarvinen, O'Sullivan, Owen-Jackson & Rutland, 2004). However, I have been able to locate only one study (Hipkins, Strafford, Tiatia & Beals, 2003) which reports directly on an instance of dialogue-based virtual professional development for teachers in New Zealand.

However, this project, as discussed in further detail in Chapter 2, did not address the range of issues raised in this chapter.

Research question

After considering the background outlined in this introduction I formulated a main research question and a number of related secondary research questions. The main research question, and the key focus on the design and conduct of the study, is:

Can a virtual community of practice approach to teacher development provide an effective means of assisting Social Science classroom practitioners to implement complex curriculum change?

A number of sub-questions follow from this:

- Can a meso-scale VCoP approach be comprehensive and meaningful enough to deal with issues in a way that will enable underpinning reasons, purposes, and assumptions in major changes in curriculum direction to be fully addressed?
- Can a meso-scale VCoP approach 'fit with' school and classroom culture and practices?
- Can a reasonably cohesive and effective community of practice be developed in the relatively short time frame of a meso-scale VCoP approach?
- Is such an approach viable and workable in design and delivery terms?
- Will teachers see such an approach as an interesting, challenging and applicable method of professional development?
- Can a meso-scale VCoP approach be designed and run in a way that results in changes in the thinking and practice of teachers?

Thus, this study sets out to develop, build, and test a meso-scale virtual community of practice approach to on-going teacher professional development and learning. It documents, in detail, the experiences and stories of three groups of teachers and educators as they worked with me in developing and testing the approach. These narratives provide rich data that are then used to evaluate the effectiveness of the approach in relation to the key research

questions outlined above. The next chapter begins the narrative of the project by outlining the literature reviewed to provide a basis for the design of the study.

Chapter Two – Literature Review

Introduction

This chapter reviews recent literature relevant to this study and discusses the links between key literature findings and the design and conduct of this study. The introduction outlines the process used in reviewing and reporting on literature central to the study. The first substantive section of the chapter places the study in context by reviewing literature outlining the changing face of Social Sciences education in New Zealand. In the second section recent educational theory affecting Social Science teachers, and teaching and learning more broadly, is examined. The next three sections focus on major literature fields that theorise about approaches to working with teachers in a way that will give them a realistic chance of responding to the challenges posed by contemporary changes in teaching, learning and curriculum. These fields are: quality teacher professional development and learning (TPDL); what I have termed "community approaches to learning" (CAL); and virtual or online communities of practice (VCoP).

The literature review process

As I had worked in the fields involved in this study for a number of years, I already had a bank of literature assembled prior to beginning this project. As work on this study got underway my initial strategy was to work from key literature sources I already knew, and to use these to provide promising further references. A second strategy was to search in a number of locations using the following key terms:

- community of practice
- virtual communities
- virtual communities of practice
- teacher professional development
- teacher learning
- online professional development
- research methodology
- educational research

- theories of education

The main search locations were:

- the University of Waikato Library catalogue
- educational and Social Science dictionaries (both in the library and in University of Waikato library online data bases)
- Google scholar

On some occasions when I was experiencing difficulty in tracking a particular reference, or finding enough quality references on a given topic, I used additional search tools such as a standard Google search or the Education Resources Information Centre (ERIC) to identify further sources. Such searching produced a large bank of potentially valuable literature. It was impossible to read all of this and so certain limits were applied to the searching and reading. The main strategy was to use the following criteria to focus the research on the most promising and useful material:

- Date of publication. In the main I focused on post 1995 publications. However, some earlier highly influential and seminal works were also included.
- Relevance to the main research question and related concerns. I concentrated on literature that appeared to address, directly, communities of practice, virtual communities and teacher professional development and learning.

Changes in Social Sciences education

The New Zealand online professional development researcher, Vince Ham, notes that "teaching is at heart an ethical activity. It is an attempt to do good for others," (Ham, 2005, p. 64). As a general rule, teachers are concerned to do the best they can for the pupils they teach. In the field of Social Sciences teaching, this means developing knowledge and understanding about human society in a way that enables students to participate fully and positively, in a dynamic and rapidly changing local and global society (NZMoE, 1997; 2007). The knowledge and the skills required to achieve this overall goal are both contestable and changing. Many teachers are concerned to be up-to-date as they seek to foster appropriate

knowledge and abilities in their pupils. However, in doing this they are often faced with complex new concepts, ideas and approaches.

Educators in the post-modern era have suggested that there is a need to change the theory, content and pedagogy of Social Science disciplines and curricula (Liepins, 1993; Pang, Guy & Stanley, 1995; Slattery, 1995)**.** Bliss (2005) points out that such suggestions are based in wide ranging post-traditional thought, including: the perspectivism of Nietzsche; the constructivist and socio-cultural theory of Vygotsky; and feminist theory. Within the Social Sciences, post-colonial and multicultural commentators have stressed the importance of the increasing diversity of current theoretical and cultural perspectives for the Social Science disciplines (Johns & Brewin, 1997; Anderson & Gale, 1999). In addition, citizenship educators have advocated a stronger focus on an understanding of different values and perspectives in an increasingly interconnected, diverse and pluralistic world (Lynch, 1992; Cogan & Derricott, 1998; Bloomfield, 2000) .

An increasing focus on perspectives in Geography education

This scholarship and advocacy has influenced Social Sciences curriculum and assessment frameworks. Geographers interested in school Geography have called for a stronger focus on difference through the study of gender, Māori, bicultural and multicultural perspectives (Stokes, 1987; Longhurst & Peace, 1993; Johns & Brewin, 1997; Keown, 1998b). Leaders in the New Zealand Geography education community have responded to such advocacy through the New Zealand Board of Geography Teachers' Position Paper, which argued that theoretical perspectives such as feminism, post-colonialism, postmodernism and deep-ecology have become important in academic Geography, and should become a key dimension of school Geography (New Zealand Board of Geography Teachers, 1999). International scholars such as Liepins (1993) and Bliss (2005) in Australia, and Morgan (1996) and Carter (2000) in the UK have also suggested this.

While there has been little opportunity for curriculum change in Geography in the last 20 years due to changing education policy following *Tomorrow's Schools* (Lange, 1988), there has been considerable change in assessment policy and practice (Chalmers & Keown, 2003; McPherson & Keown, 2004). The Geography achievement standards of the National Certificate of Education Achievement (NCEA) include perspectives in the notes for each

standard. The notes are expressed differently at various levels. The 2004 notes of the level one standards stated that the "Perspectives that relate to this achievement standard may include knowledge, practices and beliefs, such as indigenous, Māori, scientific and gender," (NZQA, 2004a). The level three assessment notes for the same year stated that the "Perspectives that relate to this achievement standard may include knowledge, practices and beliefs, such as, Māori, indigenous, gender, scientific, environmental, post-colonial" (NZQA, 2004b). These changes have introduced new and quite unfamiliar concepts for many teachers and created a need for professional development in this area.

The NCEA achievement standards guideline documentation refers teachers to a *Statement on Perspectives* for further clarification. This statement notes that:

In teaching Geography to students in secondary schools we are particularly interested in differentiating between different 'theoretical' perspectives. That is, we want students to know about how knowledge about the world is organised and understood from different points of view. In other words, we are keen to find out whether different ways of looking at things, thinking about things, talking about things and organising our understanding of things affects what we can know about things. In essence, if we have a different 'perspective', do we have a different but equally 'true' version of events?

(NZQA, 2002, p1)

However, explaining what the perspectives are and what they mean does not result in teachers becoming fully prepared and confident to teach about them and to guide students in their understanding and use of them. Geography teachers have been aware that examiners could require students to show their understanding of perspectives since 2002. In 2007 the NZQA included a specific and direct question of this type for the first time. In the examination for standard 90704, *Select and apply skills and ideas in a geographic context,* the examiner stated that "Cities can be viewed as gendered, that is, parts of a city can be viewed as masculine and other parts viewed as feminine" (NZQA, 2007). The question that followed asked students to "Study the five photographs in Resource F and explain from a feminist perspective the way each of these particular urban areas may be viewed" (NZQA, 2007).

Thus over the past decade Geography teachers have been encouraged to introduce perspectives into their teaching, and progressively this change is being forced through increasing the requirements for students to show a working knowledge of perspectives in assessment documentation and now in exams. This in turn means teachers need to know and understand new and complex concepts and terms in order to prepare their students for these changing emphases. However, my interaction with teachers at meetings where this issue has been discussed suggests that most teachers have limited understanding of the nature of the perspectives suggested, and are unsure about how to include and develop them in topics and lessons (Keown, 2005). The modules developed in this study aimed to address this issue.

Values exploration and perspectives in Social Studies

Values have been an important dimension of the Social Studies curriculum over many years. The 1978 Form One to Four Social Studies curriculum statement included values as one of the four key "complementary and inseparable aspects of Social Studies" (New Zealand Department of Education, 1978, p. 4). Social Studies commentators in the 1980s and 1990s called for this aspect of the subject to be strengthened and broadened. Numerous articles have called for Social Studies teachers and the Social Studies curriculum to address Māori, Pacifica, gender and environmental values and perspectives (Alton-Lee & Densem, 1992; Simon, 1992; Hunter, 1993; Benson, 1998; Harrison, 1998; Keown, 1998b).

A position paper for Social Studies, written to background the 1997 Social Studies curriculum, noted that new forces such as globalization, pluralism, sustainability, technology, post-modernity, critical theory and post-structural Social Science required Social Studies to move in new directions (Barr, Graham, Hunter, Keown & McGee, 1997). The authors drew on Social Studies scholars from the United States and Australia, who similarly emphasized the need for a greater focus on difference, on perspectives and on values (Hill, 1994; Pang et al., 1995; Gilbert & Hoepper, 1996). The position paper writers quoted Banks as saying "we must help students understand the knowledge construction process and the ways in which scholars of colour and feminist scholars are challenging the Social Science disciplines" (Banks as cited in Barr et al., 1997, p. 36).

Again, as in the case of Geography, curriculum and assessment framework writers in Social Studies have responded to the calls for change. A new mandatory process of values

exploration was introduced in *Social Studies in the New Zealand Curriculum (*SSNZC) in 1997. Values exploration is defined as a process of involving "students in examining and clarifying their own values and those of others in relation to issues in society" and examining "the collective values on which social structures and systems are based" (NZMoE, 1997, p. 17). A mandatory achievement objective for students at every level of SSNZC states that "Students will demonstrate skills as they; collect, process and communicate information about human society; explore and analyse values; make decisions about possible social action."

<div align="right">(NZMoE, 1997, front cover foldout)</div>

Values exploration also became one of the six Social Studies standards in the NCEA achievement standards for senior secondary students. Standard 1.4 *Examine differing values positions* states:

> This achievement standard involves an understanding of why people hold differing values positions and the consequences of these. It requires the demonstration of this through at least one of Māori perspectives, bicultural perspectives, multicultural perspectives, gender perspectives, perspectives on current issues, perspectives on the future.

<div align="right">(NZQA, 2003a)</div>

Standard 3.4 *Examine a values system* states "This achievement standard involves analysing relationships between aspects of a values system and explaining the significance of these related aspects for society" (NZQA, 2003b).

It is also significant that SSNZC requires teachers to prepare and teach programmes that include appropriate development of not only the three process outlined, but also five strands, five perspectives, six settings and nineteen items of essential learning about New Zealand. The perspectives specified in SSNZC, include gender, biculturalism and multiculturalism. These requirements all have a relatively strong focus on difference, values and perspectives and require teachers to address values and perspectives much more directly and more thoroughly than in the past. While the degree of specification of these aspects is less detailed in the Social Sciences dimension of the *New Zealand Curriculum* (NZC) published in 2007,

the importance of values and perspectives is still strong on the Social Sciences statement (NZMoE, 2007, p 30).

As in the case of perspectives in Geography, there is evidence to suggest that the emphasis on values and perspectives has been difficult for many teachers (Keown, 1998a; Hunter, 1999; ERO, 2001; Taylor & Atkins, 2005). These difficulties are not surprising. International critics and researchers have noted that many teachers find working with values and perspectives problematic (Powney, Cullen, Schlapp, Glissov, Johnstone & Munn, 1995; Stevenson, Ling, Burman & Cooper, 1998; Lovat, 1998). These researchers found that most teachers were willing to engage with values in their teaching, but frequently appeared to have a poor foundation from which to do so, as most teachers had no coherent framework for teaching about values. They also noted that while there is plenty of values education literature available, this is rarely addressed in pre-service teacher education programmes or in in-service professional development. Further they found that formal teacher training programmes tended to be based on old approaches to values education largely unsuited to the 21st century, and that teachers are therefore not well equipped to address the issues of the post-traditional society. In particular, they concluded, methods of dealing with values clashes, uncertainty and confusion are not well known, understood or practised. In New Zealand various commentators have raised similar issues and problems (Keown, 1998a; Clark, 2000; O'Neill, 2004).

This brief survey of the literature outlining the steps leading to the inclusion of perspectives and values in Geography and Social Studies curriculum and assessment frameworks, and the apparent difficulty teachers have in implementing these requirements, highlights the need for professional development to assist teachers deal with perspectives and values more effectively.

Educational learning theory

Teacher professional development and communities of learning and practice are learning environments, and the way in which learning experiences in this study are planned, structured and practiced is influenced by learning theory. Changing learning theory is also influencing

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teachers' practice. These changes have seen an increasing focus on pedagogy in recent curriculum (NZMoE, 2007, p. 34-35).

There are many different ways of classifying learning theories (Biddulph & Carr, 1999; Collins, Greeno & Resnick, 2001; Shuell, 2001; Barker, 2008; Learning Theories Knowledgebase, 2009). Some writers divide learning theory into quite discrete categories (Biddulph & Carr, 1999) while others recognise the are considerable overlaps and many subtleties in the way theories and classifications of them are described and used (Shuell, 2001; Barker, 2008). In reviewing a range of recent commentators four categories emerged as useful in the discussion of learning theory in this study: behaviouralism and early cognitive science, cognitive-constructivism, socio-cultural constructivism, and situated learning. All four categories are of relevance to this study, however, socio-cultural constructivism and situated learning are the most influential.

Behaviouralism and Early Cognitive Science

Behavioural and early cognitive science perspectives on teaching and learning rarely feature in current educational literature, however, a large number of classroom teachers still use behavioural and early cognitive science approaches in their teaching. Key theorists in this approach are often considered to be Thorndike, Pavlov, and Skinner (Collins, Greeno & Resnick, 2001; Barker, 2008). Shuell (2001) describes behavioural and early cognitive science learning as typified by a "curriculum that) generally consists of factual information and methods for solving well-defined problems" ... [and] ... learning occurs ... "as a result of reinforced practice of predefined material for the purpose of reproducing this information or skill when needed". Classes using a behavioural approach employ "activities that stress factual information (often isolated from other information), repetition (in one form or another), and correct answers" (Shuell, 2001, p. 15471).

The learner in this approach is seen as a responding to the external information and ideas presented to them, usually by answering the teacher's questions, or by doing tasks presented to them by the teacher. At the end of this process the students are expected to have learned the key facts, information and skills the teacher intended. Behaviouralism is teacher oriented and typically uses abstract contexts and settings. There is a focus on teaching the basics first and extending to more complex learning later, where and when possible. There is a heavy

emphasis on recall assessment as the process of presenting and practicing is assumed to result in learning (Shuell, 2001). Learner as machine is a metaphor sometimes used to sum up this approach. Thus the learner is thought of in this approach as receiving inputs which are then practised, processed and memorised and then reproduced as outputs.

This learning theory is not important in the design and conduct of this study. However, some of the views and practices held by teachers involved in the study were influenced by aspects of this paradigm.

Cognitive constructivism

Constructivism is a broad and complex field of learning theory. Constructivist learning theories have a strong influence on current educational thinking and the approach taken in this study reflects this. Many commentators recognise two major divisions, cognitive constructivism and social constructivism.

The former is considered to be derived from the work of theorists such as Piaget (1955), Bruner (1986), Ausubel (1968), and many others (Smith 1999; Collins et al., 2001; Schell, 2001; Shuell, 2001; Elkind, 2003). Cognitive constructivism has a strong focus on the learner's mental structures and how individual learners construct meaning and understanding through two interrelating processes, adaption and mental organisation. Adaptation is a process of assimilation and accommodation where new ideas and information are assimilated into, and added to, the individual's existing metal structures. When new ideas and information which do not match the learner's existing mental structures are encountered the learner's metal structures are re-organised to accommodate the new ideas and information and thereby change the organisation of the learner's mind. There is constant negotiation and interaction between the 'internal' mind of the individual and 'external' objects, information and ideas, and through this, ongoing accommodation and re-organisation occurs and the individual learns. Learning is seen as an ongoing process of constructing and re-constructing knowledge and understanding through adaptation and mental reorganisation (Barker, 2008).

Constructivist learning is often portrayed as based on the active participation of learners in problem-solving and critical thinking using real and authentic problems (Brewer & Daane, 2002). A constructivist curriculum proceeds from what learners know, and what they find

puzzling, to a student organised search for answers (Barker, 2008). Cognitive conflict and puzzlement followed by research and experimentation leading to the development of new understanding is a key aspect of constructivist approaches. A learning metaphor for cognitive constructivism is learner as biological organism where learning is constructed and modified over time.

Cognitive constructivism is important in this study. The idea that learners (in this case teachers) start by reflecting on what they already know and do, and on what they find puzzling, to then focus on a search for answers, is a key part of the approach used in the professional development modules of this study. Similarly, the participants are provided with new ideas and approaches that create cognitive conflict and puzzlement. This is followed by further thinking and research and experimentation designed to promote the development of new understandings of ways to teach in the perspectives and values domain. There is also an emphasis on private and personal reflection and thinking outside the module community, where the individual can work through an adaption and re-organisation process using new ideas and thoughts generated inside the module learning environment.

Socio-cultural constructivism

A second division of constructivism is social, namely socio-cultural theory. Like cognitive theorists, socio-cultural theorists also consider that learners construct knowledge and understanding, rather than just receiving and assimilating it as in the behavioural and early cognitive science view. However, in contrast to the cognitive or internal constructivists, socio-cultural theorists consider much learning takes place "outside the individual — in psychological tools (such as language) and interpersonal relations" (Kozulin as cited in Reusser, 2004, p. 2059).

Socio-cultural constructivists suggest that cultural tools (or artefacts) are the mediators of progress and that we acquire tools from our culture and the prior learning of our species. They consider that these tools are derived from society, from the people around us, and not from within ourselves. Vygotsky considered that when we acquire a tool such as language, the tool itself mediates between the external stimuli in the subsequent responses. These tools or symbol systems are not merely the means by which we think: they in fact reorganise the manner in which we think (Gredler, 2003). So in this theory the internal mental framework

and environment are both important, and thought and experience are intertwined in context. In Vygotsky's view, society, through the aid of more experienced others, helps learners regulate their actions until they have internalised the mediating devices and are able to use them without outside guidance or intervention (Gredler, 2003).

A socio-cultural perspective is very important in this study in a number of ways. First this theory leads us to view Social Sciences and Social Science education as human social activities conducted within institutional and cultural frameworks. Socio-cultural theory suggests that cooperative human activity is only possible because we all grow up and live within larger-scale social organizations and institutions, and our "participation in (our) associated communities teaches us tools for making sense of, and to, those around us," (Lemke, 2001, p. 296). As a result, how individuals learn and talk, and what they believe and value, are both unique, but also usually typical of all the cultures and communities in which we have lived. Lemke (2001) suggests that this results in a view of education, or any branch of education such as Geography or Social Studies, as a second socialization or specialist enculturation into a sub-community. In a socio-cultural view, what matters to learning and practicing Social Science is "primarily the socially learned cultural traditions of what kinds of discourses and representations are useful and how to use them" (p. 298).

Socio-cultural theory has been very influential as the source of many ideas about teaching and learning such as the ideas of student readiness, authentic contexts, scaffolding learning and the importance of dialogue in the learning process. It underpins most recent theory and literature in the fields of teacher professional development and learning, community approaches to learning, and virtual communities of practice. The strongest influence of socio-cultural theory in this study is the emphasis on dialogue and discussion in professional development experiences, where a group of like-minded professionals share knowledge, ideas and practical strategies, and all the individuals involved learn a great deal from the shared culture and experience of the group. The specialist tools of the subculture (concepts, strategies, approaches, language etc) are key aspects of the learning philosophy of the VCoP approach.

Situated learning theory

Lave (1988) coined the term "situated cognition", but this theory has most often been called "situated learning theory" since the publication of *Situated learning: legitimate peripheral participation* (Lave & Wenger, 1991). It is also sometimes referred to as "community of practice theory" (University of Georgia College of Education, 2007c). In this study I use the term situated learning theory. Situated learning theory is an extension of the ideas of cognitive constructivism and socio-cultural learning theory to develop a fully co-constructivist view of learning which highlights participation in a community of learners, and the culture of that community. This view of cognition is not entirely new and is similar to many aspects of the theorising of Dewey and Vygotsky (Schell, 2001; University of Georgia College of Education, 2007c).

Lave and Wenger have developed learning theory further than the socio-cultural position in their focus on the nature of situated learning and the way it works within communities of practice (Lave & Wenger, 1991; Wenger, 1998; Wenger et al., 2002). While the community of practice idea has much in common with other community oriented theories such as community of learners, community of inquiry and community of knowers, the community of practice label stands out as the most appropriate for this study because of its focus on practice communities (such as teachers).

In a community of practice context all who are participating in the learning community, students and teachers alike, interact and negotiate new meaning that moves beyond the meaning possessed by individual members before their active engagement in the learning community. Two coexisting activities are central in this process of co-construction. The first is collaborative problem solving and the second is the construction and maintenance of "a joint problem space" (Reusser, 2004, p. 2059). This co-construction concept underpins much VCoP thinking, particularly the concept of collaborative problem solving and the idea of using online learning technology as a shared work space. These ideas are central to this study and discussed in greater detail later in this chapter. However, before moving on, it is important to consider two important concepts associated with situated learning theory: distributed cognition and situated cognition.

Distributed cognition is a complex concept, but for many it means cognitive processes that are distributed across the members of a social group (Salomon, 1993; Hutchins, 1995, Hutchins, 2001). It suggests that human knowledge and cognition are not primarily individual but distributed among the memories, facts or knowledge within the objects, individuals and tools in our environment (Perry, 1999; Woods, 2005). It is important for this study in that the rich range of ideas, objects and tools distributed among the members of a learning community is seen as valuable to the whole community as it negotiates new shared understanding through dialogue. This concept underpins the high value this study places on the knowledge and experience of all members of the learning community.

Situated cognition advocates emphasize that learning takes place in specific social contexts rather than in the de-contextualized world of abstract concepts and models. They suggest that we should not separate what is learned from how it is learned and used (Brown, Collins & Duguid, 1989). It is argued that learning is most effective when it is set within the culture and within situations familiar to the learner, rather than divorcing the learning from these familiar and authentic settings. It is suggested that activity and perception are key aspects of learning that occur prior to conceptualization and that this activity and perception "are first and foremost embedded in the world" (Brown, Collins & Duguid, 1989, p. 41). Advocates also recognize that a wide range of ecological factors affect learning in real-world situations. For example personal interruptions, workplace politics, timetabling constraints and private agendas all have an influence.

Situated cognition is used in this study to provide a focus on participant dialogue about teaching and learning in their schools and classrooms, and in the emphasis on trialling new ideas in their own classrooms then reporting back to a practice community.

Teacher professional development and learning (TPDL)

The focus of this study is in-service teacher learning rather than pre-service teacher learning or school classroom learning. Most in-service learning for teachers is located within the field of teacher professional development sometimes also termed "Continuing Professional Development" or CPD (Day & Sachs, 2004). As professional development is the term most often used in the New Zealand context these words will be incorporated into one of

the key terms for this study. However, as recent literature also focuses on teachers as learners and on best practice teacher learning I am combining the two ideas (PD and TL) and adopting the term Teacher Professional Development and Learning or TPDL as the name for this field throughout this study.

Professional development is an established term, well understood by teachers for more than a century. Professional development can, in its simplest form, be defined as "the development of competence or expertise in one's profession", or "the process of acquiring the skills needed to improve performance" as a teacher (Simpson, 2008). Timperley et al. (2007) suggest professional development is "an intentional, ongoing and systematic process" with the term having "taken on connotations of delivery of information to teachers to influence practices" (p. 3). Unfortunately, professional development has been subject to critical comment in recent educational literature (Lee, 2000, Kwakman, 2003).

Professional learning, on the other hand, is a more recent term that "implies an internal process through which individuals create professional knowledge" (Timperley et al., 2007, p. 3). This term began to be used in the late 1980s and early 1990s as a number of writers began to argue that schools should become learning organizations (Bolam, McMahon, Stoll, Thomas, & Wallace, 2005; Giles and Hargreaves, 2006). This school of thought suggests that learning communities draw on the "collective power of a shared vision and the collective intelligence … of their human resources" (Giles & Hargreaves, p. 126). This resonates with socio-cultural and situated learning theory and as a result professional learning is often the preferred term for recent commentators.

Given the powerful barriers to making a significant change in the practice of secondary teachers, and the complexity of effective teacher professional learning outlined in Chapter 1, designing and implementing successful professional development and learning is best regarded as problematic. A positive starting point is the work of Bell and Gilbert in the New Zealand Learning in Science Project (Bell & Gilbert, 1996). Bell and Gilbert found that to be effective, teacher development requires that individual teachers develop or learn in three distinct ways; socially, professionally and personally. They found that if any one of these dimensions is given insufficient attention the teacher development process is likely to achieve much less than expected. The Social-Professional-Personal (SPP) Model of Teacher Development that emerged from their project is set out in Figure 1.

The basis of the model is that teacher development needs to take place in a social interaction context.

Figure 1: The Social-Professional-Personal Model of teacher development

Phase	Social Development	Professional Development	Personal Development
Phase 1	Seeing isolation as problematic	Trying out new activities	Accepting some aspect(s) of current teaching as problematic
Phase 2	Valuing collaborative ways of working and reconstruction of what it means to be a teacher of subject/field concerned	Developing ideas and approaches in the classroom	Developing ideas and approaches in the classroom. Dealing with restraints and constraints
Phase 3	Initiating collaborative ways of working	Initiating other development activities	Feeling empowered

(P. Keown, adapted from Bell & Gilbert, 1996)

Bell and Gilbert describe the social development component of teacher development as involving, "the renegotiation and reconstruction of the rules and norms of what it means to be a teacher" of a particular subject or field (p. 61). Within the social dimension of professional development teachers interact collaboratively to work through issues and find practical solutions in a community of colleagues.

The personal aspect of teacher development, in contrast, involves "each individual teacher constructing, evaluating and accepting or rejecting for herself or himself the newly constructed knowledge about what it means to be a teacher" in a given field. It also involves "managing the feelings associated with changing their activities and beliefs", especially if the new ideas involved go "against the grain" of currently accepted knowledge (Bell & Gilbert, 1996, p. 15).

The professional development component involves "not only the use of new teaching activities in the classroom but also the development of the beliefs and conceptions underlying the actions". The clarification of core values and commitments, Bell and Gilbert suggest, is important in developing new moral, knowledge and methodological frameworks (p. 161).

Time is also a factor. It takes a considerable amount of time for a teacher to move through all the three stages of Figure 1. Bell and Gilbert note that current models of professional development often fail to allow sufficient time for this process to be completed. Indeed, an evaluation of teacher development programmes in science and mathematics by Gilmore (1994) found that most teachers felt they were predominantly still in the first stage of the model by the end of their programme.

There are several syntheses that have identified key features of quality teacher professional development. For example, in an extensive review Putnam and Borko describe four principles widely considered important in successful teacher learning programmes:

- Teachers should be treated as active learners who construct their own understandings.
- Teachers should be empowered and treated as professionals.
- Teacher education must be situated in classroom practice.
- Teacher educators (and professional developers) should treat teachers as they expect teachers to treat students.

                                        (Putnam & Borko, 1997, p. 1224-1225)

They suggest that while these statements are rooted in important and valid ideas, many of which are explored in other parts of this chapter, they contain complexities, dilemmas and problems that are often not fully appreciated.

In another review the Education Review Office (ERO) (2000), identified the five principles paraphrased below (and re-ordered to reflect the Putnam and Borko sequence). They suggest that it is vital to pay attention to:

- The complex interplay between theory and practice. Professional development should avoid a quick fix approach to ensure teachers develop conceptual understanding.
- Relevance and ownership. Professional development should address teachers' real needs.

- Beliefs about teaching and learning. Professional development should involve a re-examination of teachers' beliefs about teaching and learning. This is time consuming and can be disturbing.

- Situated learning. Professional development must address the characteristics of the students and school situation of the teacher.

- Contexts for change. Professional development should explain the factors effecting implementation and change.

<div align="right">(P. Keown adapted from ERO, 2000, p. 15-16)</div>

These principles resonate strongly with Bell and Gilbert (1996), Putnam and Borko (1997) and other recent TPDL literature (Day and Sachs, 2004; Whitehouse et al., 2006, Timperley et al., 2007), and sum up important principles for quality TPDL design. These principles were used in the formulating the VCoP approach for TPDL as outlined in Chapter 4.

In a review of cluster schools for ICT professional development in New Zealand, Ham (2005) cautions that ... "the interplay among the various variables that might combine to produce an effective PD programme is complex" ... [and] ... "for the most part irreducible to a single formula of best practice," (p. 69). He considers, however, that the New Zealand ICT Project (a Ministry of Education funded programme running since 1999 where clusters of schools worked together to explore and foster innovative use of ICT to support teaching and learning) confirms that "holistic and longitudinal" programmes are superior to "reductionist and short-term" models. His evaluation also suggests that quality content and strong interactional and interpersonal dimensions are very important in achieving a high level of success.

Critical reviews of professional development projects suggest that many programmes do not meet the principles outline by ERO. Reviewers have often found that most teachers attend short term sessions that are selected by others, presented by outside experts and predominantly use direct instruction (Sandholtz, 2002; Kwakman, 2003; Schlager & Fusco, 2003). Teachers often describe professional development experiences as boring and irrelevant, and forget most of what is covered (Lee, 2000; Allen, Osthoff, White & Swanson, 2005), and are often deficit focused. That is, they assume teachers need information from outside experts to 'fix up' inadequacies in their practice. Such PD frequently ignores key principles of adult learning (Knowles, 1984; Vella, 1994). Teachers are often seen as passive

receptors and not considered as sources of knowledge in their own right. Sessions are frequently separated from teachers' daily work, contain inappropriate and irrelevant content, and are poorly planned and poorly focused (Lee, 2000; Sandholtz, 2002; Allen, Osthoff, White & Swanson, 2005).

However, there are professional development and learning programmes that are consistent with the principles of quality professional development. Internationally the National Geographical Society's (NGS) Geography Education and Alliance programmes are considered very successful (Binko, Neubert & Madden, 1997; Englert & Barley, 2003). The Cognitively Guided Instruction project, the Summer-Math for Teachers project and the Practical Argument Project are also cited as successful programmes in science, mathematics and literacy (Putnam & Borko, 2000). In New Zealand, the Learning in Science project is seen as a successful model (Bell & Gilbert, 1996). The Te Kotahitanga Project (Bishop, Berryman, Tiakiwai & Richardson, 2003) and the Information Communications and Technology Project (Ham et al., 2002; Ham, 2005) also appear to operate in a way that is consistent with many of the key principles.

In summary, it appears that four key elements for TPDL stand out in TPDL literature. These are the:

- constructed nature of knowledge and beliefs, and the importance of personal thought and reflection about them
- social and distributed nature of cognition
- situated nature of cognition
- importance of ongoing development that allows sufficient time for these three elements to be worked through

The first element involves the teacher in a process of personally finding out about new ideas, skills and approaches and interpreting their meaning and significance. The teacher will also think through the issues and decide which aspects they believe to be important and can be adopted or adapted for their classroom teaching. This involves deep reflection on underlying assumptions, values and beliefs, and deciding to make changes on the best evidence available. The second element emphasizes the importance of the social dimension of professional development and suggests that teachers learn best when working in a dialogue

and action community. Ideas, perceptions and approaches are shared, discussed and debated. The experiences, skills and strengths of each member of the community are harnessed to assist in the learning and development of all. In addition the community is able to provide support and encouragement as members grapple and experiment with new ideas and approaches. In this way the knowledge, skills and tools distributed among the group are harnessed. The third element recognizes that professional development with teachers needs to be closely tied to the real situations and contexts of individual schools, teachers, and classrooms. Teachers need to be able to apply, experiment and reflect on new ideas and approaches in real situations. These experiences in turn, can be brought back to the community for further discussion and reflection. The fourth element is that quality programmes recognize the importance of time. It takes time to develop a vibrant social community where reasons for change and underlying philosophies and concepts can be fully and openly explored and debated. Individual teachers within the community need personal time to work through the issues involved in new ideas and approaches. It takes time to adapt and apply new concepts and approaches in the classroom. Short courses and workshops, while beneficial; do not allow sufficient time to enable the three other elements of TPDL to be enacted.

Putnam and Borko conclude their synthesis by suggesting that:

> A strong model for staff development may be the combination of a summer school workshop that introduces theoretical and research based ideas and a programme of ongoing support during the year as teachers attempt to adapt these ideas and introduce them into their classrooms.
>
> (Putnam & Borko, 1997, p. 1260)

Many of the successful programmes referred to earlier follow this kind of approach. The NGS programme, for example, employs summer institutes of two to five weeks and follow-up continuity programmes, including a mix of; advanced institutes, study groups, consultant meetings, workshops, and conferences at various points throughout the school year following an initial summer institute (Binko, Neubert & Madden, 1997). The New Zealand Te Kotahitanga Project (and the associated Te Kauhua Model) uses an extended three phase process (Bishop et al., 2003, p120-130). In the first (Relationship) phase teachers and

researchers meet, discuss and collaborate on setting up the TPDL project. In the second (Hui) phase, a four day face-to-face meeting develops ideas and issues from phase one, and then introduces ideas and strategies for change in phase three. In the third phase (In-class Observation and Development), detailed feedback and feed-forward (from outside facilitators) on new directions in teaching and practice is provided on three separate occasions over a full school year. Projects of this type clearly have a great deal to offer. However, there are major draw backs – they are highly labour, time and resource intensive and require considerable financial resources. Professional development budgets in schools, and indeed in many education systems, cannot afford to run such expensive models for large numbers of teachers. This study investigates a much more resource-modest approach, while still embracing the four key principles of TPDL.

Critics have identified other problems in existing models of professional development. School wide professional development, highly regarded as more successful because it reaches all teachers in a school (as compared with trickle down models referred to below), and is well situated in the context and culture of schools is, according to some critics, seriously flawed. Critics point out that professional development sited solely within a single school can easily become too cosy and fail to question existing practice sufficiently (Campbell, McNamara & Gilroy, 2004). Critics further point out that the many large budget regional or national professional development projects, while providing in depth and ongoing professional development for those involved, often fail to achieve as much as expected because they assume that the knowledge, values and skills developed will be disseminated through schools by those who attended. The assumption that a 'ripple' or 'trickle down' effect will spread the effect of regional and nationwide professional development often fails, as there is no effective structure or process for the depth of thinking and the ongoing nature of the original programme repeated for ordinary teachers (Secada, 1989). Yet other critics point out that current models of professional development fail to develop critical thinking, and that professional programmes amount to unthinking adoption of official thinking (O'Neill, 2004).

The literature on TPDL is very important in this study. The approach used in this study seeks to focus strongly on the four key principles of TPDL and at the same time to avoid the common pit falls of various approaches outlined in the literature.

Community approaches to learning (CAL)

There is currently a great deal of interest in CoPs as a framework or approach for TPDL that meets the four key criteria of quality professional development for teachers (Lave & Wenger, 1991; Wenger, 1998; Wenger et al., 2002; Mitchell & Young, 2002; White, 2002; Schlager, Fusco & Shank, 2002; Schlager & Fusco, 2003; Wing-Lai et al., 2006). Communities of practice as a specific approach to professional learning are a relatively recent phenomenon. However, the idea of dialogue-based and socially-situated communities as a viable means of facilitating complex learning has a much longer history. There is a long tradition of valuing democratic dialogue-based learning as a highly effective pedagogy. Dewey (1901), Freire (1970) and Vygotsky (1978) have all argued that learning begins from a social context and that internal reflection and monologue follow from previous social interactions. Four well researched current movements in this tradition are now reviewed as they provide valuable sources of ideas in support of a teacher-centred community of practice approach to TPDL.

Community of inquiry

Community of inquiry as a concept emerged from work in the moral education and philosophical thinking in education. Working in the Kohlberg programme of moral reasoning and moral dilemma discussions, Oliver and Bane (1971) noted that for a group to be influential, it must be important enough to an individual to take the thoughts and feelings of others seriously. The climate of the discussion group must also be comfortable enough that each person can reveal themselves to some extent to the others, and relationships need to be open and egalitarian. In an effective discussion group, no member's thought is rejected out of hand, but neither is any member's thoughts accepted uncritically. Oliver and Bane considered this type of group situation is vital to the examination of deep-rooted values and attitudes (p. 268).

Power and Power (1992) support Oliver and Bane's assessment. They suggest that "in our view, faith in, and commitment to, a democratic community can only be born in what sociologists describe as a primary group setting" (p. 196). They note that primary groups typically involve intimate face-to-face association, cooperation, informality and spontaneity.

Secondary groups on the other hand are often characterised by "impersonality; formality; a lack of spontaneity; cold rational calculation; narrowly circumscribed roles; dissimilar values, goals and attitudes of group members; and relationships viewed as means rather than ends in themselves" (Nixon as cited in Power & Power, 1992, p. 196).

The Philosophy for Children (PFC) programme was developed by Matthew Lipman and his colleagues (Lipman, Sharp & Oscanyan, 1980; Sharp, 1987). They developed discussion communities of the type envisioned by Oliver and Bane, and Power and Power, and described these as a community of inquiry. Teachers in some schools and universities in Australia and New Zealand are currently using the PFC approach. Typically the members of a community of inquiry decide together on topics and help form an agenda for discussion. All participants in the discussion community are regarded as equal, all ideas are accepted, and negative personal comments are not acceptable. Ideas introduced into the community are carefully examined, and if necessary, challenged. Sharp (1987) argues that communities of inquirers can reason together on how to think and act (or teach) well and at the same time be tolerant of a diversity of perspectives on what it is to think and act (or teach) well. This can help people to move towards objectivity and a relatively impartial shared view that has been subjected to public dialogue and debate. Communities of teachers working cooperatively to improve practice can combine the ideas of a discussion community outlined above with Bell and Gilbert's SPP model, to talk out developing thoughts and ideas, opening them up to scrutiny in a supportive community of professionals. Sharp has also described some key skills and qualities that characterise effective communities of inquiry. Participants, she suggests, need to be taught and mentored to develop these in order to ensure quality communities of inquiry. Each participant needs to:

- listen to others attentively
- revise one's views in the light of reasons from others
- take one another's ideas seriously
- build upon one another's ideas
- develop their own ideas without fear of rebuff or humiliation from peers
- remain open to new ideas
- show concern for the rights of others to express their views
- detecting underlying assumptions
- show concern for consistency when arguing a point of view

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- ask relevant questions

- verbalise relationships between ends and means

- show respect for persons in the community

- show sensitivity to context when discussing moral conduct

- ask for reasons from one's peers

- accept questions of peers willingly

- discuss issues with impartiality

- ask for criteria

(Sharp, 1987, p. 41)

Community of learners

Communities of learners are similar to communities of inquiry and communities of practice. The community of inquiry approach has been developed in the fields of moral and philosophical thinking. The community of learner movement is however broader, and advocates similar disciplined democratic dialogue-based techniques for all learners in any field of learning. The concept of a community of learners was initially developed in adult and community learning, but has also increasingly been advocated as valid in school and other learning contexts. A number of theorists have made major contributions to this field including: Brown & Campione, 1994; Rogoff, Matusov & White, 1996; Wineburg & Grossman, 1998; Bielaczyc & Collins, 1999; Pringle, 2002; Evans & Nicholson, 2003; Shulman & Sherin, 2004.

Rogoff et al. (1996) contrast the community of learner model with two common models of learning: the adult (or teacher) run, transmission model on the one hand, and child (or learner)-centred model on the other. They note that the community of learner model is not a balanced or optimal blend of the two one-sided approaches, but is based on an entirely different philosophy of learning. They note that "in a community of learners all participants are active: no one has all the responsibility and no one is passive," (p. 396). They suggest that all participants collaborate in a learning community. More experienced participants (often senior colleagues or adults) may guide the process; but less experienced participants (often junior colleagues, or children) are also responsible for their management of their own learning, and indeed, at least to some extent, for the learning of each other (p. 397). Learning communities can comprise groups of adults (and/or children) who investigate issues and

share what they learn with others in the community, thus advancing both their individual knowledge and the community's knowledge. To summarise, some of the characteristics of a community of learners described in the literature are that:

- Respect is displayed and demanded for the diverse ideas, skills, and experiences of all members of the learning community.
- Participants develop a significant voice in decisions about the content and context of their work and take responsibility for the learning of all members of the community.
- Collaboration among community members is actively nurtured.
- Ongoing formal and informal discussion are structured and facilitated on the basis of a shared understanding of rules of social discourse.
- The skills, attitudes, and values of rigorous but respectful inquiry are modelled and emphasised.

Community of knowers

Another concept similar to that of communities of learners has been developed by Palmer (1998) who sees a community of learners as working together as co-learners in a community of "knowers". A community of knowers, sometimes also referred to by Palmer as a community of truth, is a group of people seeking answers to issues and questions through dialogue. For Palmer there is no ultimate authority in such a community; rather, knowing, learning, and teaching is a dialogue among a community of knowers who examine a common subject in a fully co-operative and shared way. Palmer's work focuses on adult learner contexts (as this study does) and in a school classroom context a teacher needs to retain overall responsibility for the classroom, but create specific discussion contexts where there is full power sharing. Palmer argues those who wish to use this kind of a community in their teaching need to able to shed the role of teacher as expert to work alongside students as an equal in a group of knowers. In this kind of community all participants are regarded as knowing worthwhile things about the topic in hand. There will naturally be differences in who knows what, and when a teacher is in a community of knowers he or she may well know more than the students in the group, but chooses not to allow this to dominate in the discussion. The teacher is able to provide input to the community as one of the knowers, but

in a carefully measured way so all other knowers are able to contribute their knowledge and understanding as well.

Professional learning community

As mentioned in reviewing the professional development and learning field above, in the literature on professional learning communities there has been a debate on the nature of teacher learning in school communities (Eaker, DuFour & DuFour, 2002; Bolam, McMahon, Stoll, Thomas, & Wallace, 2005; Fullan, 2005; Giles & Hargreaves, 2006). This literature suggests five key characteristics of successful teacher learning communities:

- Holding a shared vision and sense of purpose with a strong focus on all students' learning and being able to count on colleagues to reinforce objectives.

- Taking collective responsibility for student learning which helps sustain commitment, applies some peer pressure, and eases isolation.

- Reflective professional inquiry and dialogue about serious educational issues; joint planning and curriculum development; seeking of new knowledge and sharing knowledge through interaction; and applying new ideas and information to problem solving and solutions that address pupils' needs.

- Collaboration so staff in developmental activities go beyond the superficial such as in joint review and feedback, and where collegial dialogue is substantial, open and frank but retains a spirit of mutual respect and interdependence.

- Group, as well as individual, learning where all teachers are learners with their colleagues and the learning community interacts, engages in serious dialogue and deliberates about information and data, interpreting it communally, and distributing it amongst members.

<div align="right">(Bolam et al., 2005, p. 8)</div>

However, the most important type of community in this study is that of communities of practice.

Community of practice

The community of practice concept (CoP) is similar to the community of inquiry, community of learners and community of knower traditions, but places greater focus on communities of people who practise a particular role, job, craft, or profession. Wenger, one of the key theorists in this field, currently defines a community of practice as a group of people "who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (Wenger, 2005, web page). Given that the focus of this study is on communities of practice as an approach ideal suited to TPDL the work of Wenger and his colleagues, it needs to be examined in some detail. The concept of community of practice first emerged from the work of Lave and Wenger (1991) when they published a model of situated learning, proposing that learning involved a process of engagement in a community of practice. Their framework emerged from studying apprenticeship as a learning model. While an apprenticeship is often seen as a relationship between a student and a master, Lave and Wenger demonstrated that there were a "complex set of social relationships through which learning takes place mostly between journeymen and more advanced apprentices" (Wenger, 2005, web page).

Wenger has continued to develop the concept of community of practice, and in his 1998 book proposes a community of practice theory of learning. He suggests that engagement in social practice is central to learning. The primary unit of learning in his view is not the individual, nor social institutions, but the many communities of practice to which we all belong. In this view, learning takes place in a series of overlapping CoPs. Wenger identifies four components of this social theory of learning: *meaning*, which he subtitles, learning as experience; *practice*, learning as doing; *community*; learning as belonging; and *identity*, learning as becoming. A number of concepts of considerable importance in studying CoPs and their role in TPDL are developed by Wenger in this book.

Wenger contends that meaning is not handed down; rather it is negotiated through two complementary processes, participation and reification. His term participation describes "the social experience of living in the world in terms of membership in social communities and active involvement in social enterprises" (Wenger, 1998, p. 55). This, he explains, is in line with our common understanding of the word participation, as taking part with others in some joint activity.

The other process, reification, is less well known. This he defines as "the process of giving form to our experience by producing objects that congeal this experience into 'thingness'" (Wenger, 1998, p. 58). In other words "certain understanding is given form," (p. 59). So reification is the formalising of ideas and understanding into a procedure or a tool. A curriculum document or a model of the inquiry process, are examples of reifications in the field of education. However, the curriculum or the inquiry model only become operational in schools and classrooms as teachers participate in working out what the curriculum, or the model actually means and how it works. Writing new programmes, resources and activities can emerge from discussion and participation about the meaning of the curriculum or model. These are then new reifications which will also come to have meaning and be understood as teachers participate together in putting them into practice. In the community of practice model of learning these two processes are a duality, not a dichotomy, and they work together in creating meaning.

Another group of important concepts Wenger develops are boundary, boundary object, and broker. Communities of practice are bounded. For example, one CoP (A) might be the group of people who worked together to create a new Social Science curriculum. Another (B) might be the school advisors who helped schools implement the curriculum. A third (C) could be a group of Social Science teachers in a particular school. Wenger notes that while these groups are distinct they are also connected and, at least at times, overlapping. For example, the Social Science curriculum is a reification developed by CoP A, but is also a boundary object which moves from A to the other two groups, introducing new ideas to them. Brokers are people who provide connections between CoPs. For example, a school adviser may have been seconded to assist in the curriculum writing process and so is a broker who works across both communities, A and B. Similarly, when an adviser arrives in a school to assist group C they bring experience to that CoP from another (Cop B) and therefore act as a broker, again introducing elements from one CoP to another.

A further issue raised, in relation to running successful CoPs, concerns what Wenger (1998) describes as "dualities" and Engestrom (1987) terms "tensions". These can be defined as "overlapping yet conflicting activities and needs that drive the dynamics of the [CoP] system" (Barab, MaKinster & Scheckler, 2003, p. 239). Wenger (1998) identified four dualities: designed/emergent; participation/reification; local/global and

identification/negotiability (p. 231-236). The first duality in particular is an ongoing issue in CoP and VCoP literature. Essentially this asks can a community be 'designed' or organised 'top down' or must it 'emerge' from 'bottom up'? Some claim successful communities emerge from as a group works out together what they need in order to improve their practice (Schlager & Fusco, 2003; Hara, 2004). Others suggest that communities can be designed for specific circumstances and be successful because they are fit for purpose (Dubé, Bourhis & Jacob, 2006).

The participation/reification duality refers to the tension between allowing ideas to emerge from the participants' interactions in a community and encouraging the formulation or use of some agreed summary or model of practice. The local/global duality concerns balancing the value of focussing strongly on locally based ideas and practices and the need to connect these to national or global events and agendas. The identification/negotiability tension refers to the extent to which the community focuses on individual identity and needs and negotiating shared meanings and directions. Barab et al. (2003) add a further duality – online/face-to-face – a tension that is important in this study. All of these tensions are important at various points in this study and this is discussed further, particularly in Chapter 8 and Chapter 9.

In referring to community, Wenger emphasises the importance of three dimensions of a community in a community of practice sense: mutual engagement, joint enterprise and shared repertoire. Mutual engagement includes engaging with the full diversity of views in the CoP, doing things together and forming relationships. Joint enterprise includes negotiating the processes, procedures and rules used in the CoP, and assuming mutual accountability for the conduct of the CoP. Shared repertoire includes the development of shared stories, tools, actions and concepts within the CoP.

In his next major work, in partnership with two other leading CoP theorists, Wenger and his colleagues focus on cultivating and fostering communities of practice (Wenger, McDermott & Snyder, 2002). This work is highly significant for this study because it focuses specifically on the formation and management of communities of practice. There are three key factors that distinguish a community of practice from other kinds of communities and groups, and the terms differ from Wenger's previous 1998 work. First, a community of practice has an identity defined by a *shared domain of interest*. In this study the shared

domain of interest is Social Science teaching, and in particular perspectives in Geography and values exploration in Social Studies.

Second, a community of practice is a *community*. That is, the members engage in joint activities and discussions, where they help each other and share information. They have relationships that enable them to learn from each other and from reifications. Third, members of a community of practice are *practitioners*. They are people who are regularly involved in carrying out the practical tasks associated with their particular domain. Members of the community of practice interact with each other to develop a shared repertoire of resources: experiences; stories; tools, and ways of addressing recurring problems. It is this focus on practising in the field under study that distinguishes a community of practice from a community of inquiry or a community of learners.

A number of CoP writers suggest that there are specific factors, or considerations, that appear highly significant in developing effective CoPs. McDermott (2001) for example, identifies the following factors in successful communities of practice. They:

- focus on topics of vital interest to the community members
- are facilitated by a well respected community member
- create time and encouragement so people can participate properly
- build on the core values of the discipline community
- involve key thought leaders
- builds personal relationships among community members
- contain an active passionate core group
- use forums for thinking together as well as systems for sharing information
- are technically easy to access and contribute to
- create real dialogue about cutting edge issues

(Adapted from McDermott, 2001, p. 4)

Wenger et al. (2002) suggest seven principles important in developing viable and productive communities of practice. These are to:

- design for evolution

- open a dialogue between inside and outside perspectives

- invite different levels of participation

- develop both public and private community spaces

- focus on value

- combine familiarity and excitement

- create a rhythm for the community

(Wenger et al., p. 2)

The factors and principles above, along with other key CoP ideas and concepts discussed in this section are all important considerations in building a workable model and approach for this study and in establishing communities of practice using the approach in the field. These ideas are woven into the approach for this study as outlined in Chapter 4.

Before concluding this section, two other fields of literature associated with community of practice approaches need to be mentioned. First, activity theory is a field that recognises that two basic processes, internalization (cognitive constructivism), and externalization (socio-cultural constructivism), are both operating continuously at every level in human activities. Activity theory holds that local activity works with historically formed artefacts and resources and uses networks to move these around, combining and transforming them in unique ways. Activity theory draws on Engestrom's Activity System Model (Engestrom, 1987). This model identifies that learning activity comprises:

- "tools", organizing concepts, models or methodologies

- "objects", the particular field, topic, or problem of focus

- "subjects" the individuals, groups or the collective engaged

These three elements correspond to Vygotsky's model of mediated action (Vygotsky, 1978). However, Engestrom's model also develops ideas about the importance of:

- "rules" a specific set of ground rules or procedural values

- "community" the social or community dimension

- "division of labour" recognises unique entities and the different roles participants play in learning activity

The elements of Engestrom's model of activity and activity theory in general are influential in community of practice theory and therefore important in this study. Further, recent researchers in the VCoP field have used an activity theory lens in their work (Barab et al., 2004; Herring, 2004; Hewitt, 2004). Activity theory ideas are also evident in the key elements of successful CoPs and VCoPs identified by McDermott (2001), and Wing-Lai et al. (2006). I considered using activity theory as a central theoretical framework for this study, but felt that to add activity theory to the situated learning and community of practice constructs would unnecessarily complicate an already complex approach. However, activity theory has been a key influence on various aspects of this study, including the list of the seven key aspects of VCoPs outlined later in this chapter.

Second, appreciative inquiry is another field of theory and research that has influenced this study. Appreciative inquiry supports the concept of collegial, situated and egalitarian dialogue in learning communities, particularly in those that are addressing the need for significant change. Appreciative inquiry theorists such as Whitney & Trosten-Bloom (2002), Cooperrider, Whitney & Stravos (2003), Preskill & Catsambas (2006), suggest that groups and organisations that are addressing change need to first identify those things they are already doing well in order to build on these and incorporate new ideas and approaches that can been seen as linked to current successes. In this way participants in a change process are likely to feel appreciated and involved rather than criticised and required to change to be acceptable in the new change environment. These ideas influenced the way that module sequences in this study were designed and the way that participants were invited to include their own successes in module dialogues.

Virtual Communities of practice

Online or virtual communities of practice (VCoP) are a specialized form of CoP using online or virtual joint working spaces as a location for a CoP. A VCoP is usually formed where community members are widely scattered geographically (distributed) and therefore rely predominantly on online discussion, or when members are prevented from meeting regularly in a face-to-face environment for some other reason (such as a lack of time).

As VCoPs are the key focus of this study it is important to consider literature on VCoPs in this section. For more than 30 years computer technology has been used in education in a

variety of ways. In the early years computers were primarily used as a tool to augment classroom activity (Pringle, 2002). ICT based education in the late 1970s and early 1980s focused on programming, and drill and practice. In the late 1980s and early 1990s the focus shifted to computer-based training using multimedia. The third period, the early 1990s, saw computer based learning move from individual and institutional networked computers onto the World Wide Web. Initially this development used a computer based training model where the focus was on disseminating information and providing exercises in order to think about, and think through, the information provided (Leinonen, Botero & Wideroos, 2000). As significant as these developments were, in the latter part of the 1990s a fourth stage of development social discussion and collaborative dialogue about information, resources and experiences emerged. This is sometimes seen as part of "Web 2.0". "Web 2.0 (or Web 2) is the popular term for advanced Internet technology and applications including blogs, wikis, RSS and social bookmarking," and differs from Web 1.0 in its facilitation of "greater collaboration among Internet users and other users, content providers, and enterprises," (What is?Com, 2009). Barab, Thomas & Merrill (2001) trace the impact of this dramatic change on education to the publication of *Computer mediated communication and the online classroom,* edited by Berge and Collins and published in 1994.

However, another key factor was the development of increasingly sophisticated learning management systems such as West, later TopClass, launched in 1995 (WBT Systems, 2002); Blackboard, founded in 1997 (Blackboard Incorporated, 1999); and WebCT, launched in 1997 (McCall, 2001). These new web-based developments in essence enabled communities of learners to use the virtual environment as a site to meet, relate, discuss and work at a joint problem solving space. The sophisticated online learning platforms mentioned above provide an online classroom style of environment that combine a range of familiar activities in one place (presentations, readings, question posing and answering, dialogue and discussion, tests and so on are all available). While the first surge in use of these online learning technologies (often termed Learning Management Systems, or LMS) was mainly by tertiary teachers, the opportunity to utilize VCoPs for professional development soon developed as well.

Online learning commentators note that a key rationale for the rapid development of online learning is the ability of the web environment to provide learning free of geographical location and narrow time frame constraint (Barab et al., 2001). Others suggest that online learning is attractive as a means of cutting the costs in delivering education at a distance

(Leinonen et al., 2000). Yet others have suggested that online learning promotes more reflection, intimacy and community than traditional face-to-face events allow (Nulden & Hardless, 1999, Splitzer, 1998). Some contest these perceived advantages of online learning, and argue that online learning is "impersonal, superficial, misdirected and potentially dehumanizing and depressing" (Barab, 2001, p. 106). This study challenges this assertion strongly in Chapter 8 and Chapter 9.

When online discussion communities are adopted as a means of professional development a number of options are available. These include individual email discussions, list server discussion communities, online groups, chat rooms, blogs and more formal discussion based software teaching platforms such as Blackboard, WebCT and ClassForum. Some of these, chat rooms for example, mimic 'normal' synchronous classroom face-to-face discussion by bringing people together to discuss issues at the same time. However, most online discussions in virtual educational contexts, such as ClassForum, are asynchronous. That is, the discussion is more like an exchange of correspondence than a face-to-face conversation. The central pedagogical idea in an asynchronous learning network is collaborative learning at the time and place of the individual learner's convenience which allows for multiple discussions to occur simultaneously, while slowing down the dynamic face-to-face interactions characteristic of the traditional classrooms (Pringle 2002; Nulden & Hardless, 1999).

The key characteristics for successful communities of practice identified by McDermott (2001) and Wenger et al. (2002) have recently been supplemented by a New Zealand synthesis with a particular focus on VCoPs (Wing-Lai et al., 2006). This analysis identified six characteristics of effective online communities of practice derived from a close examination of four successful examples of online communities of practice: The Learning Inquiry Forum; Tapped In; Education with New Technology; and Talking Heads & Virtual Heads (p. 26). The authors further identified and discussed six key design principles for effective online communities of practice that they extracted from their analysis of a wide range of studies. For the purpose of this discussion I focus on seven key factors promoting successful VCoPs evident in the synthesis. These can be summarized as:

- a clear purpose
- diverse membership and role differentiation
- an emphasis on sociability, participation and community building

- strong leadership

- a longer term rather than a short term timeframe

- cultivation of natural growth in the community

- appropriate use of technology to enhance sociability and knowledge sharing

- using a blended approach where offline activities support online work

<div align="right">(After Wing-Lai et al., 2006)</div>

Clearly this list identifies many factors also described by other key CoP writers and indeed by those examining key factors in successful TPDL. Many are also clearly underpinned by socio-cultural and situated learning theory.

The review in this section has examined some of the key international literature on VCoPs. It is clear that while there is considerable material available on VCoPs, very little of it relates to VCoPs focused on TPDL. The New Zealand based research team of Wing-Lai et al. (2006) was able to identify "a wealth of conceptual studies on communities of practice and knowledge management, but very few empirical studies on the actual practice of communities of practice, particularly with relationship to professional development of teachers," (p. 49). They state further there were "even fewer articles" identified in the field of online communities of practice, and none that attempted to measure the effectiveness of such communities.

Recent VCoP literature has also highlighted a number of important unresolved issues about the best way to operate VCoPs. Dubé, Bourhis & Jacob (2006) note that there has been a tendency for VCoP literature to promote a one size fits-all approach and often recommend lock-step methods for developing and running them. They argue that in fact VCoPs are highly varied and have "unique 'personalities'" (p. 69). They conclude "our investigation clearly shows that, in order to ensure success, management decisions and actions have to be fine-tuned toward the unique personalities of their VCoPs" (p. 89). The same three authors in another article (Bourhis, Dubé & Jacob, 2005) note that good leadership appears to be a crucial feature of successful VCoPs, yet "while the literature broadly defines the role of leaders in CoPs ... little is known about facilitating in a virtual environment" (p. 33). This study with its detailed focus on one type of VCoP is able to shed further light on these issues.

Another area of uncertainty regards Wenger's core dualities mentioned earlier. The issues of designed verses emergent, participation verses reification, local verses global and identification verses negotiability are all evident in this study. In addition, the face-to-face verses online duality raised by Barab et al. (2003) is also an issue. These tensions are discussed in more depth later, particularly in Chapter 8 and Chapter 9.

In light of this dearth of information on VCoPs it is worth briefly examining the few New Zealand studies that do examine aspects of teachers' use of virtual environments for professional development. Ham and Wenmoth (2002) note that there is very little research internationally, or in New Zealand, that gives a clear indication of how much and in what ways teachers are using ICT as a means of professional development. They note that most reported research on teachers' use of ICT in New Zealand is based on the perceptions of principals and teachers in charge of ICT in schools. There are very few studies which have worked directly with teachers. The main exceptions to this, according to Ham and Wenmoth, was an American study which found that some 68% of US teachers use the internet for professional development on a weekly basis (Becker, 1999), and one New Zealand study which concluded that a much smaller proportion (around a third) of New Zealand teachers of English were regular users of the English Online website (Davey 2001).

Ham and Wenmoth, in reviewing Davey, suggest that this study was the only one they could locate that attempted to go beyond the issue of how often teachers use web sites in order to deal with the more substantive issues of what they use such sites for, and how useful they are felt to be. The major conclusion of Davey's study was that New Zealand teachers tend to be infrequent visitors to such professional sites, and tend to find them useful only as a source of ideas for specific lessons, making little or no use of the more interactive features that are often contained in the sites.

Ham and Wenmoth's study of the use of the New Zealand Ministry of Education's online learning centre, Te Kete Ipurangi (TKI), investigated the first two years of the TKI's website operation from an end-user perspective. They analysed data from 23 clusters of teachers working on TKI material and sent questionnaires to five randomly selected teachers in 400 schools. A total of 1147 teachers replied. They found that awareness and usage significantly increased over the two years of the study, but usage was highly focused on the collection of particular teaching ideas and resources in particular topic areas, and to a lesser extent on

keeping up to date with official policy developments. They found that half of the users of the site had been able to find resources or ideas which they have subsequently applied to their daily professional lives. They also found that "usage of the more interactive public features of the site, which involve collegial communication and active contribution, was restricted to a very small minority of users who visited these sections rarely" (Ham & Wenmoth, 2002, p. 8).

Another New Zealand study (Hipkins et al., 2003) reports an instance of online professional development for teachers in New Zealand using online dialogue approaches. Data were from written questionnaire returns from 72 teachers and 30 telephone interviews. The online site for the Arts professional development contained four main sections; an online forum discussion area; a planning template section; an exemplary case study area; and a weekly newsletter. The study found that teachers, as in the Davey, and Ham and Wenmoth studies, were most interested in support materials, resources and ideas. The best used parts of the site were the planning template and case study areas. The online forum aspect of the site was seen as the least useful, and indeed only five of the 72 respondents (7%) participated in the forum on more than two occasions. It should be noted that while this is the only New Zealand study found that has used online community discussion in a dedicated teacher professional development context, the discussion mode was synchronous and operated between 4-5pm midweek.

Parr and Ward (2005), two Auckland University researchers, evaluated the FarNet Learning Community. FarNet was one of four Digital Opportunities pilot projects funded by the NZMoE in partnership with business. They found that the project was mainly used as a way of sharing resources, but that the amount of sharing and discussion was much less than expected. They noted that "building a professional learning community is difficult to achieve within a school, let alone across schools, let alone virtually (Parr & Ward, 2005, p. 133).

The overall picture which emerges from the New Zealand and international studies is that online, or virtual, professional development involving genuine discussion and dialogue is very rare. While there have been a number of examples of use of the net for professional development in New Zealand, this has focused almost exclusively on providing information and ideas, and sharing resources. In only one case (Hipkins et al., 2003), is there any evidence of a concerted effort to involve classroom teachers in issues-based, values

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challenging dialogue. The discussion in this professional development programme was, however, synchronous rather than asynchronous, and did not therefore create opportunity for ongoing thinking and dialogue on any given issue over time.

In the next section, common themes evident in the literature reviewed will be identified, followed by a review of the research questions for the study. Reference is made to some implications for methodology.

A brief synthesis of the literature

Clearly there is considerable similarity and overlap between the key learning, CoP and TPDL theories reviewed in this chapter. In particular many of the key factors outlined by McDermott (2001), Wenger et al. (2002) and Wing-Lai et al. (2006) in relation to VCoPs and TPDL researchers such as Bell & Gilbert (1996), Putnam & Borko (1997), ERO (2000), Day and Sachs (2004), Dede (2006) and Timperley et al. (2007) have much in common. There also a strong similarity between aspects of the key changes in Social Science following the cultural turn and education theory in the constructivist, socio-cultural and situated learning eras. In synthesizing these literature fields it appears that seven key factors stand out as essential for an effective VCoP approach to TPDL. They are:

- Have a clear purpose and focus of immediate and practical relevance to the participants.
- Recruit a diverse membership to the community and allow for or encourage different roles for participants within the community.
- Provide strong leadership and facilitation.
- Make appropriate use of technology, concepts tools and media.
- Develop strong community relationships and values.
- Plan and maintain an appropriate timeframe, pace and rhythm for the community and allow for evolution, flexibility and challenge.
- Develop and nurture in-depth dialogue and thinking.
- Using a blended approach where offline activities support online work.

Each of these key attributes of a VCoP approach to TPDL is discussed further and used to develop a conceptual model to guide the thinking of participants using the VCoP approach to TPDL in the Chapter 4. These seven key factors also provide a framework used to evaluate the success of the VCoP approach to TPDL in the latter chapters of the study.

Research questions revisited

In Chapter 1 the main research question, and the key question guiding the design and conduct of the study, was considered to be:

Can a virtual community of practice teacher development approach provide an effective means of assisting Social Science classroom practitioners implement complex curriculum change?

The review completed in this chapter suggests that this question is an appropriate one. Further, in Chapter 1 six sub-questions linked to the main research question were enunciated:

- Will a meso-scale VCoP approach go deep enough to deal with issues in a way that will enable underpinning reasons, purposes and assumptions in major changes in curriculum direction to be fully addressed?
- Will the approach be able to 'fit with' school and classroom culture and practices?
- Can a reasonably strong VCoP be established in a relatively short time frame?
- Will a meso-scale VCoP be viable and workable in design and delivery terms?
- Will teachers see such an approach as an interesting, challenging and a practical method of professional development?
- Will the approach change the thinking and practice of teachers?

Again the literature reviewed in this chapter confirms the value of such questions, since there is a paucity of evidence related to them.

Chapter Three – Methodology

Introduction

This chapter outlines the methodology of the study. It begins with a short discussion on the nature of research and key issues in the educational research literature. It explains the methodological and theoretical approaches adopted for this study. The research design is then outlined and issues of validity and reliability are discussed. The methods of sampling, data collection and data analysis used in the study are explained and key validity and reliability issues in relation to these are explored.

Research has been described as "a systematic investigation to find answers to a problem" (Burns, 2000, p. 3). More specifically it is often seen as "the systematic, controlled, empirical and critical investigation of hypothetical propositions about the assumed relations among natural phenomena," (Cohen et al., 2000, p. 5). Research can use both experience and reasoning in a systematic and controlled manner in order to ensure that answers to the problem, question or issue being investigated are valid. This study is a systematic investigation to find out if teacher professional development for New Zealand Social Studies and Geography teachers can be implemented in a virtual (online) environment. It is systematic, controlled, empirical and critical as it investigates the effectiveness of the implementation of a virtual community of practice approach for teacher professional development and learning.

Major paradigms in educational research

Research in education is often seen as enmeshed in two competing views (or paradigms) about the nature of research. Some refer to these two contrasting paradigms as the "scientific empirical tradition" and "the naturalistic phenomenological mode," (Burns, 2000, p. 3); or as an "established, traditional view" on the one hand, and a "more recent interpretive view," on the other (Cohen et al., 2000, p. 5).

The scientific empirical, or traditional, paradigm is underpinned by objectivist assumptions. That is, it tends to employ a realistic ontology, a positivistic epistemology, a

deterministic view of human nature and a nomothetic (seeking general laws) methodology. The naturalistic and interpretive paradigm on the other hand is based on subjectivist assumptions. It uses a nominalistic ontology, an anti-positivistic or interpretivist epistemology, a voluntarist view of human nature and an idiographic methodology focusing on the particular and the individual (Cohen et al., 2000, p. 5).

The most common way of categorising these two competing paradigms is to term them the *quantitative paradigm* on the one hand, and the *qualitative paradigm* on the other. However, in recent years a *mixed methods paradigm,* which combines elements of both, has become a popular methodology for educational researchers. These three research paradigms are explored further in the following sections.

The quantitative paradigm

The quantitative paradigm of educational research dominated educational inquiry from the late 19th century and through much of the 20th century (Creswell, 2005 p. 39). The quantitative research paradigm developed in the physical sciences and came into education largely through Psychology. Education research using this approach often investigates experimentally-manipulated psychological factors (Shank, 1995).

The quantitative paradigm is strongly influenced by positivism and an objectivist conception of social reality. It assumes that the methodological procedures of science can be applied directly to the Social Sciences, including education. Within the quantitative paradigm the researcher is seen as an observer of social reality and the results of research expressed in law-like generalisations. Quantitative research is often characterised by an emphasis on:

- collecting and analysing information in the form of numbers
- collecting scores that measure distinct attributes of individuals and organisations
- the procedures of comparing groups or relating factors about individuals or groups in experiments, correlated studies, and surveys

(Creswell, 2005, p. 41)

Typically in quantitative research the researcher "decides what to study, asks specific, narrow questions, collects numeric (numbered) data from participants, analyses these numbers using statistics, and conducts the inquiry in an unbiased, objective manner," (Creswell, 2005, p. 41).

The quantitative paradigm offers considerable advantages and strengths to the researcher. First, qualitative approaches control many of the uncertainties and ambiguities of social research through tightly structured design and sampling. This often focuses on a small number of tightly defined variables measurable in numeric terms. Second, qualitative research is often seen as precise. Use of the scientific method and an experimental approach it is suggested leads to clear statements about causation. Hypothesis testing and the statistical analysis of quantitative data provide results and conclusions that are regarded as strong, trustworthy and evidence-based. Quantitative data is also readily present in visual formats that can make it easier to understand and communicate key findings.

The quantitative paradigm also has a number of disadvantages. The objectivist and positivistic underpinnings of the approach render it narrow and mechanistic and unable to take full account of the complexity of social human behaviour. This approach often "excludes notions of choice, freedom, individuality, and moral responsibility" and is often seen as problematic in complex educational contexts (Cohen et al., 2000, p. 17). Indeed one commentator suggests that "[s]ince human judgement is so profoundly part of every human act, the supposed objectivity of science is, in fact, a delusion," (Burns, 2000, p. 10). Habermas (as cited in Cohen et al., 2000) suggests scientific mentality has often become elevated to the point that hermeneutic, aesthetic, critical, moral and other forms of knowledge are neglected.

Others have suggested that positivistic quantitative approaches "fail to take account of our unique ability to interpret our experiences and represent them to each other," (Cohen et al., 2000, p. 19). Further, the experimental approach typical of much quantitative research, by restricting, simplifying and controlling often ends up with a "pruned, synthetic version of the whole, a constructed play of puppets in a restricted environment," (Mishler as cited in Cohen et al., 2000, p. 19).

The qualitative paradigm

Qualitative approaches, on the other hand, are eclectic and holistic and consequently able to capture more of the subtle nuances of social and educational interaction and thinking. The qualitative paradigm developed in educational research in the 1950s and 1960's when non-experimental, observational, field-oriented and data-driven research techniques from anthropology and sociology began to be used (Denzin & Lincoln, 2005; Shank, 1995). Field and ethnographic approaches adopted at the time included participant observation, unstructured interviewing and case studies. The qualitative paradigm has become increasingly popular since it was introduced into education, and new methodologies such as action learning and action research (Lewin, 1948; Carr & Kemmis, 1986; McGill & Beaty, 1995; Zuber-Skeritt, 2001); grounded theory (Glaser & Strauss, 1967); and narrative inquiry (Mitchell, 1981; White 1981; Bruner 1986; Connelly & Clandinin, 1990; Connelly & Clandinin, 2000) have been developed.

Qualitative research is a diverse field of inquiry but typically the qualitative researcher "relies on the views of participants, asks broad, general questions, collects data consisting largely of words (or text) from participants, describes and analyses these words for themes, and conducts inquiry in a subjective and biased manner," (Creswell, 2005, p. 39).

The qualitative paradigm offers distinct advantages to the educational researcher, as it is open to a wide range of methodological approaches and it accepts the natural scheme of things. The approach is usually characterized by a close working relationship between researcher and participants which enables the researcher to acquire an 'insider's view' of the field. This close association and the word-rich focus of data collection means subtle qualities of social and educational interaction are documented for analysis.

As a result, qualitative descriptions and analyses provide rich information that can provide considerable insight into the reasons why particular trends or forces are working in the way observed by the researcher. In other words qualitative descriptions and analyses have explanatory power. For example qualitative data often suggest possible relationships, causes, affects and even dynamic processes at work in research settings and hence provide in-depth information on teacher interpretations, motivations, ways of working and reasons for actions. Such information often suggests ways to improve learning and teaching environments and

practices.   Further, as qualitative research does not usually employ complicated statistical material and focuses on a descriptive and narrative style of reporting, it is often more readily understood by teachers.

There are, however, some disadvantages inherent in the qualitative paradigm. Because qualitative research is subjective and conducted in a particular context and frequently with relatively few participants it is often difficult to generalize or repeat studies. It is also difficult to demonstrate reliability and validity. Qualitative research is very time consuming and labour intensive. Often the volume of data collected and its complexity also means that analysis and interpretation is similarly time consuming and difficult.

Because the qualitative paradigm is often characterized by a close participant – researcher relationship, some consider that the influence of the researcher on the research and issues of authenticity and bias need to be addressed. To counter this qualitative researchers have developed rigorous qualitative analysis, multiple methods and triangulation as ways of addressing these issues.

While there are distinct differences between the quantitative and qualitative paradigms, many educational researchers today suggest that both approaches are needed. This combined quantitative and qualitative approach, the mixed methods approach, is discussed in the next section.

Mixed methods research

Mixed methods researchers combine different methods of data collection in particular studies. Mixed method research as a distinct research design developed from the work of Campbell and Fiske (1959) and Jick (1979). These researchers were mainly concerned about increasing the validity of their qualitative research by collecting different kinds of data bearing on the same phenomenon. This was seen as a way to improve inquiries by "blending the strengths of one type of method and neutralizing the weaknesses of the other" (Creswell, 2005, p. 516). In the late 1990s interest in the approach grew and other purposes for mixed methods research beyond triangulation were advanced. Collecting qualitative and qualitative data in different phases of a study, or from multiple levels in an organization are some of the

variations currently advocated (Creswell, 2000). Processes for integrating qualitative and quantitative data analysis have also been developed.

A number of writers have suggested that mixed methods research fits well with pragmatism. Pragmatists and mixed methods researchers reject any forced choice between positivism and constructivism. Both consider specific decisions regarding the use of mixed, qualitative methods or quantitative methods depend on the nature of research question and the nature of each stage of the research cycle and both avoid the use of metaphysical concepts such as truth and reality. Tashakkori and Teddlie (2003) suggest both pragmatism and mixed methods offer a highly practical applied research philosophy, (p. 21).

Further, recent 'ways of knowing' such feminisms, critical social science, postmodernist and post-structuralist thought incorporate a broader set of beliefs and assumptions, and welcome more diverse methods that move beyond quantitative - qualitative dualisms. Some argue that pragmatic mixed methods research is, in essence, a "third methodological movement" operating beyond the qualitative verses qualitative and positivism verses constructivism paradigm wars and is a "legitimate alternative to the excesses of the earlier two traditions," (Tashakkori & Teddlie, 2003, p. 699).

This approach is similar to a view advanced by some who see the contemporary researcher as a 'bricoleur': one who is a "Jack of all trades, a kind of professional do-it-yourself," (Levi-Strauss, (as cited in Denzin & Lincoln, 2005, p. 4); one who makes use of whatever methods seem best suited to the research context and may even invent new tools or piece together existing tools and techniques in a new way that fits a particular research setting. A bricoleur approach often results in a 'quilted' design where various methods are stitched together in a unique way, but in a way that suits the nature of the study.

Creswell (2005) identifies three broad research designs reflecting the three paradigms discussed above and further identifies two or three more specific designs nested within each. In the quantitative area, Creswell identifies experimental, correlational, and survey research. The qualitative research category comprises grounded theory, ethnographic, and narrative research. The final broad area, combined quantitative/qualitative research includes two specific designs: mixed method and action research (p. 52).

In exploring mixed method research Creswell identifies three main types of mixed-methods design. Triangulation design studies "simultaneously collect both quantitative and qualitative data, merge the data, and use the results to understand a research problem." (Creswell, 2000, p. 514); and to ensure that one data collection form supplies strengths to offset the weakness of other form(s). The explanatory design approach collects quantitative and qualitative data separately in sequence or in different phases of the study. Often quantitative data is collected first and used to identify general themes and trends, and further qualitative data is then collected to tease out complexities and or provide greater depth. The third approach, the exploratory design, begins with qualitative data and then uses quantitative data to develop and or explain relationships found in the qualitative data.

Action research and action learning (ALAR) have also become very influential in much recent qualitative research. Three important theoretical constructs underpin ALAR: grounded theory (Glaser & Strauss, 1967); Personal Construct Theory (Kelly, 1955); and The Frankfurt School of Critical Theory and its followers such as Carr and Kemmis (1986). Action learning (AL) has been defined as "a process of reflecting on one's work and beliefs in the supportive/confrontational environment of one's peers for the purpose of gaining new insights, and resolving real business and community problems in real time" (Dilworth & Lewis, 2003, p. 11). Action research (AR) is usually regarded as a recurring cyclic process of: identifying a problem area; collecting and organizing data; interpreting data; taking action based data findings; and finally reflecting on the outcome of the action. In action research this reflection leads to the identification of new issues and another cycle of AR often follows (Carr & Kemmis, 1986).

Some researchers consider that there is little difference between action learning and action research and refer to both together under the title "action learning action research" or ALAR (Zuber-Skeritt, 2001; Sankaran, Dick, Passfield & Swepson, 2001). Such commentators consider that both include active learning, researching, problem solving and systematic inquiry. Where a distinction is drawn between the two this is usually done on the basis of the degree of academic rigor involved. Action research is usually considered more systematic, rigorous, verifiable, and is always made public (in publications, oral or written reports). Action learning, on the other hand, is often considered as less formal, less rigorous and is usually not published but used by participants 'in house,' (Zuber-Skeritt, 2001).

The methodological approach of this study

After careful consideration of the methodological approaches discussed above, I positioned this project within the mixed methods paradigm. With respect to Creswell's classification, this study is predominantly an exploratory mixed methods design which starts by collecting qualitative data and then uses a mix of qualitative and quantitative data to develop and explain relationships found in the qualitative data. However, it also uses aspects of an explanatory design approach, as at some points in the study quantitative data is collected, general themes identified and then further qualitative data is examined to explain complexities and provide greater depth.

In addition, in the tradition of researcher as bricoleur (Denzin & Lincoln, 2005) using pragmatic mixed methods (Tashakkori & Teddlie, 2003) this study also includes elements of grounded theory, narrative, and action learning action research design. The ways in which these elements are combined in this particular study are explained in more detail in the following sections.

Theoretical framework

Denzin and Lincoln note that qualitative research contains "a series of tensions, contradictions and hesitations. These tensions work back and forth between and among the broad, doubting postmodern sensibility; the more certain more traditional positivist, post-positivist, and naturalistic conceptions of (the research) project," (Denzin & Lincoln, 2005, p. 27). Further as qualitative research is interpretive, it is important that the researcher declares the nature of the particular "set of beliefs and feelings about the world and how it should be understood" that they bring to their work (p. 27).

Denzin and Lincoln (2005) suggest that at the most general level there are four major interpretive paradigms that structure qualitative research. They term these as the positivist and post-positivist, the constructivist interpretive, the critical and the feminist post-structural paradigms (Denzin & Lincoln, 2005, p. 22). Adopting a slightly different approach, Cohen et

al. (2000) identify three significant theoretical lenses on the practice of research; the normative (scientific and positivistic); interpretive (and naturalistic), and critical (p. 35).

In using a pragmatic and bricoleur approach, this study draws on a range of these paradigms. It is post-positive in that it relies on multiple methods as a way of capturing as much reality as possible, and emphases the discovery and verification of theories, models or in this case, approaches. Using qualitative procedures that lend themselves to structured analysis such as frequency counts, tabulations and graphs are typically post-positivist (Denzin and Lincoln, 2005, p.12). Such approaches are used in parts of this project.

However, elements of this study move beyond the post-positivist paradigm to a more constructivist-interpretivist one. The study is strongly constructivist and socio-cultural in theoretical orientation in that it adopts a relativist ontology, accepting that there are multiple realities, and a subjectivist epistemology, where both researcher and participants co-create understandings. Constructivist and socio-cultural research typically use naturalistic and interpretive methodological procedures and these are employed in this study.

As discussed in Chapter 2, a socio-cultural and situated-learning theory underpins the community oriented learning approach central to CoPs. The work of Dewey, Bruner, Vygotsky, Lave, and Wenger underpin the constructivist and socio-cultural paradigms. Current VCoP research draws strongly on socio-cultural and situated learning theory. Barab, McKinster & Scheckler (2003), Herring (2004), Hewitt (2004), Job-Sluder & Barab (2004) and Gray & Tatar (2004), for example, all stress such approaches. I also accept many of the tenants of post-structuralism and post-modernism, and so the study is also positioned within recent paradigms of Social Science that suggest that no given set of assumptions about reality and knowledge is sacrosanct. Thus I support suggestions that scientific realism, hermeneutics, feminisms, critical Social Science, post-modernist and post-structuralist paradigms mean that social reality is both causal and contextual, and social knowledge both propositional and constructed (Tashakkori & Teddlie, 2003; Denzin & Lincoln, 2005).

My position is that this study falls mainly within the naturalistic and interpretive frame while including some elements of the positivistic and critical paradigms. Cohen et al. (2000, p. 21-22) note that a naturalistic and interpretive theoretical framework holds that:

- people are deliberate and creative in their actions
- people actively construct the social world
- situations are changing and fluid rather than fixed and static
- people interpret events, contexts and situations and act accordingly
- there are multiple interpretations of, and perspectives on, single events and situations
- reality is multilayered and complex
- many events are not reducible to simplistic interpretation and 'thick descriptions' rather than reductionism are important
- it is important things in situations through the eyes of the participants rather than the researcher

There are however, however, two other points on the Cohen et al. list on which I take a different approach and these warrant some discussion. First, it is suggested that naturalistic and interpretive research adopts a view that, "the social world should be studied in its natural state, without the intervention of, or manipulation by, the researcher" (Cohen et al., 2000, p. 22). In this research the pragmatic ALAR dimensions of the study require a focus on procedures useful in addressing practical problems in the professional development of teachers, and seek to improve professional development practice. This is inevitably more interventionist than the Cohen et al. (2000) natural state statement above.

Second, the Cohen et al. (2000) list also states that events and individuals are unique and largely non-generalisable. Again, while events and issues may be unique, the grounded theory aspect of the study suggests that some generalization in the form of an approach can be formulated and used as a professional development tool and a research tool. On this point the study contains elements of a post-positivist approach.

In summary, this study has a blending of approaches which is typical of mixed methods research, with some post-positivist elements when these are the best research tools for the circumstances.

Study design

The discussion so far makes it clear that this study is primarily in the mixed method category, and within that, primarily an exploratory mixed methods design. Creswell (2000) notes that an exploratory mixed methods design begins by gathering qualitative data in order to explore a phenomenon. At a later point quantitative data are then collected to provide further evidence to strengthen the warrant of the claims drawn from the qualitative data. He notes that a popular application of this design is to "explore a phenomenon, identify themes, design an instrument, and subsequently test it," and that, "one advantage of this approach is that it allows the researcher to identify measures actually grounded in the data obtained from study participants," (Creswell, 2000, p. 516).

Most of the data in this study are drawn directly from the participants in the form text generated in three online professional development modules, in participant focus group discussions, and in open-ended reflective questionnaire responses. All three data sets are predominantly qualitative. The online module text is naturalistic data in that it is a full record of what happened as the three modules were run. More focused semi-structured focus group and questionnaire data were then collected after the online module work was completed. Following the initial qualitative data collection, qualitative techniques are used to explore the data further. Quantitizing (Tashakkori & Teddlie, 1998) and qualitative content analysis techniques (Job-Sluder & Barab, 2004) were then used to produce scores, scales, tables and graphs that help describe patterns and themes evident in the qualitative data. Further details are provided in the following data collection and analysis sections.

The mix of explanatory and exploratory mixed methods research used in this study is set out in Figure 2. At one level the study uses what Creswell calls an "explore-design–test" sequence. In the explore phase ideas about what constitutes a quality virtual community of practice approach for professional development were investigated by reviewing key literatures as outlined in Chapter 2. In the design phase, as outlined in Chapter 4, a specific approach to a VCoP process for professional development is designed. Finally in the test phase of the study the VCoP process is used to implement and test the approach in three professional development modules.

Figure 2: Overall study design

The full **exploratory mixed method** study inside this ellipse

Problem Definition
Explore the nature of quality VCoP teacher professional development and learning and identify main issues and research focus
(Chapter 1)

Literature Review
Explore the nature of quality VCoP teacher professional development and learning and identify key attributes of quality VCoPs for TPDL
(Chapter2)

Evaluating the Approach
and
Drawing Conclusions
(Chapter 9)

Initial Approach Development -
Design a practical VCoP approach for TPDL based on literature findings
(Chapter 4)

Approach Testing, Ongoing Development Data Collection and Analysis

Through a three cycle **grounded, ALAR** investigation
(Chapters 5-7)

Discussion of Findings
Interpreting the outcomes of the test and ongoing development phase
(Chapter 8)

Module 1 (test 1)
Implement, report, and reflect

Module 2 (test 2)
Refine, implement, report, and reflect

Module 3 (test 3)
Refine, implement, report

The **'nested' grounded ALAR** aspect inside this shaded area

However, in this study, the testing phase of the sequence is at the heart of the investigation and within this phase a grounded ALAR sequence is used. At this point the approach is tested, refined, re-tested, refined further and re-tested again through a three phase ALAR sequence.   Thus the study employs a nested design. There are two distinct levels in the design, one nested inside the other. At the most holistic level the study is exploratory mixed methods research. This level provides a framework for the overall project.

At a second level and nested inside the structure of the holistic level, is the grounded ALAR aspect of the design. This part of the study focused very strongly on testing and refining the approach. The key instrument in implementing the approach is an online professional development module which includes specific VCoP and TPDL process developed for this project. The nature of the overall approach and the professional development modules are discussed in detail in Chapter 4.

The study also makes use of narrative methodology. The study as a whole is a narrative of what happened as the VCoP approach to TPDL was trialled and refined through the professional development module experiences of three different groups of teachers and educators. The data analysis and results sections of the study (Chapters 5-7) report on and examine the stories of the groups and individuals who participated and interacted in the modules.

Thus this research is best described as an exploratory mixed methods study using a grounded-action-narrative approach. It is a qualitative oriented study set in the tradition of researcher as bricoleur and pragmatist. This has resulted in a quilted design where elements of exploratory mixed method, grounded theory, narrative and ALAR approaches are blended in way that is appropriate to the nature of the study.

Study research process

Creswell (2005, p. 44) notes that the research process is usually conducted by moving through six distinct steps or stages. These are identifying a research problem, reviewing the literature, specifying a purpose, collecting data, analyzing and interpreting data, and reporting and evaluating the research. This stepped approach is now melded with key ideas developed

in the research methods discussion above to present a clear outline of the project design. This study is structured into five distinct stages as outlined below.

Stage 1: Explore. At the outset a process of practice reflection and initial analysis of literature and theory identified a key research question, "can a net supported (virtual) community of practice teacher development approach provide an effective means of assisting Social Science classroom practitioners implement complex curriculum change?" A further five sub-questions important in answering the main research question were also formulated.

Stage 2: Literature Review and Approach Development. An extensive literature review and process followed. A synthesis of the literature reviewed identified seven key factors or criteria important in developing a VCoP approach to TPDL. The literature review and in particular the seven key criteria of quality VCoP were used to construct a prototype VCoP approach to TPDL.

Stage 3: Approach Testing and Development and Data Collection. The prototype approach was then tested, refined and reshaped as three groups of teachers and educators took part in separate online teacher development modules using the VCoP approach in a TPDL experience. This stage in the research process used an ALAR and grounded theory approach.

Three distinct data collection points were embedded in this stage.

- the full online text from each module
- follow up focus group discussions
- a final reflective survey questionnaire

Stage 4: Data Analysis and Interpretation. All data collected in stage three were analysed using content analysis and narrative techniques (Cohen et al., 2000; Herring, 2004). This analysis and interpretation took place at two levels. First, the online dialogue, focus group and questionnaire data were analysed using both structural and semantic analyses (Job-Sluder and Barab, 2004). Two tools (MDDA and MQR, (refer to page 78) were developed

to frame the semantic analysis and the results of both analyses were woven into an interpretive narrative. Second, data illustrating typical and atypical individual and group responses were the subject of further content analysis and the results woven into a series of short narratives telling the stories of individuals and groups.

Stage 5: Reporting and Evaluating the Research. Finally the research questions, the seven key criteria for quality VCOP-TPDL, and Gusky's method for assessing the success of TPDL were used to evaluate the extent to which the VCoP approach to TPDL was effective as a means of assisting Social Science classroom practitioners implement complex curriculum and assessment change.

Validity and reliability

Particular methodological issues associated with each of the data collection and analysis techniques and tools outlined are discussed in detail later in this chapter. However, initially general methodology issues such as the validity and reliability within the study as a whole are considered here. This discussion is followed by sub-sections on specific data collection and analysis tools describing techniques and instruments used, and discussion of the validity and reliability issues associated with them.

Tashakkori and Teddlie (1998) note that a researcher must answer two basic questions about their data. First, a question pertaining to validity asks whether the study is truly measuring or recording what it was intended to measure or record, rather than something else. Second a question concerning reliability asks whether a researcher is measuring or recording what was intended, and whether the measuring or recording is without error. If a measurement or recording instrument is reliable it should yield the same results consistently over time and in different contexts (p. 80). Qualitative researchers frequently use the criteria of credibility, transferability, dependability and confirmability to assess the validity and reliability of qualitative research (Lincoln & Guba, 1985; Denzin & Lincoln, 2005).

Credibility concerns the fit between the participants intended meaning and the interpretation and coding of participant statements by the researcher. It is important that the researcher is accurately communicating what the informants were actually saying. Agar (as

cited in Cohen et al., 2000) has argued that the intensive personal involvement of qualitative researchers with individual participants ensures this. However, frequently other measures are used to assure credibility and dependability. These include respondent validation and triangulation (Cohen et al., 2000, p 120).

Transferability refers to the extent to which data and findings are likely to be the same or similar if collected or applied in a different but comparable location or setting. Because, naturalistic inquiry is particular and specific some argue this criteria is not relevant in qualitative studies. However, others have pointed out that if a study can demonstrate that it is representative of other contexts to which it might be applied, there can be some confidence that the transferability criteria holds (Lincoln & Guba, 1985, p. 298).

Dependability is related to concepts of consistency and replication. In essence it asks that if this data were collected again would similar material be forthcoming and would similar findings result. Again naturalistic researchers are often wary of this term. However, overlapping methods, stepwise replication and triangulation are frequently seen as ways to demonstrate dependability.

Confirmability is related to the qualitative concepts of neutrality and objectivity. It refers to the process of being able to trace data and findings back to the original participants to allow checking that the researcher has recorded and reported what was actually said accurately, objectively and in an unbiased way. Again, naturalistic researchers are wary about this and argue that all research is, at least to some extent biased. However, many agree that qualitative researcher should be able to show that all data is able to be traced and confirmed as from the original source. Audit trails and triangulation are seen as ways of demonstrating confirmability.

Other means of assuring quality, reliability and validity relevant to this study include triangulation, constant comparison, prolonged engagement, and persistent observation. Triangulation is defined by Cohen et al. (2000) as "the use of two or more methods of data collection in the study of some aspect of human behaviour."

Triangular techniques in the social sciences attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint

and, in so doing, by making use of both quantitative and qualitative data. Triangulation is a powerful way of demonstrating concurrent validity, particularly in the qualitative research.

<div align="right">(Cohen et al., 2000, p. 112)</div>

Le Compte and Preissle (as cited in Cohen et al., 2000) describe constant comparison as combining elements of inductive category coding with other events and social incidents that have been observed and coded over time and location. Glaser and Strauss (as cited on Cohen et al., 2002, p 151) suggested that "in constant comparison data are compared across a range of situations, times, groups of people, and through a range of methods." This process resonates with the notion of triangulation.

Prolonged engagement is described by Lincoln and Guba (1985) as investing sufficient time in data collection such that the researcher is able to learn the culture of the group, build trust, and test for misinformation. The notion of persistent observation addresses similar issues. When using this approach the researcher spends considerable time with the group being researched so that they become aware of multiple influences and the key characteristics and elements central to the problem or issue under study, and gain some depth of information on these (p. 301-305).

Triangulation, constant comparison and prolonged engagement and persistent observation are all strong features of this study. The way these techniques were applied in this study are discussed in the following sections.

Data and sampling

Sampling issues are inherently practical. Scholarly decisions may be driven in part by theoretical concerns, but it is in sampling, perhaps more than anywhere else in research, that theory meets the hard realities of time and resources. … Sampling issues almost invariably force pragmatic choices.

<div align="right">(Kemper, Stringfield & Teddlie, 2003, p. 273-274)</div>

Sampling is an issue in this study at two different levels. Firstly, the study is a sample of a relatively small number of Social Science educators. Secondly, as the study collected a large amount of qualitative data only a sample of the extensive online data has been analysed at depth. These two issues are discussed separately below.

The teacher sample

Kemper et al. (2003) note that, "in an ideal world, a researcher would have access to the entire target population of any area of interest" (p. 274). In this case, all secondary school Social Science teachers in New Zealand. Clearly this was not practical. Inevitably, time and resource constraints meant I had to work with a small sample of the target population. Methodologists divide sampling techniques into probability sampling, usually associated with quantitative studies and larger samples, and purposive sampling which is typically associated with qualitative studies and smaller samples. The present study falls into the second category and Kemper et al. list six main purposive sampling techniques: convenience; extreme/deviant case; confirming/disconfirming cases; typical case, homogeneous case; stratified purposive and random purposive; and opportunistic and snowball sampling.

This study is best described as a mix of the convenience, opportunistic and snowball sampling, and the confirming/disconfirming case strategies. Convenience (or volunteer) sampling involves drawing elements from a group that is easily accessible; in this case the individuals who choose to take part in the online modules. Opportunistic and snowball sampling involves taking advantage of circumstances and events as they arise. Opportunities to gain suitable participants are taken up as they present themselves during the course of study field work, for example when the MoE project officer suggested that Beacon school teachers enrolled in the modules (refer to page 69).

Confirming and disconfirming case sampling refers to the process of selecting, from the range of possible individuals and groups that could be analysed and discussed, a small number of cases that illustrate key situations that confirm or disconfirm the hypothesis or approach under investigation. In this study I selected a small number of individuals and groups for more detailed analysis in Chapter 6.

The sample population in this study comprised the 37 educators who enrolled in three online modules run in 2003 and 2004 and who took part in at least one aspect of the online programme. There were six further individuals who enrolled in the modules, but for various reasons, did not actually take part in any aspect of the online modules (see Chapter 6). As this study is focused on the extent to which the online modules are a workable and useful means of facilitating ongoing professional development, and as these six individuals did not actual appear in the online module texts, they were not included in the analysis.

The online modules were publicised through Geography and Social Studies professional association magazines and newsletters, University of Waikato Leadership Centre professional development mail outs, presentations at Geography and Social Studies teachers' conferences and through various Geography and Social Studies teacher networks and contacts. The individuals who responded to these invitations, paid an enrolment fee, and then took part in some aspect of an online module, make up the sample.

Participants in the study were drawn from different recruitment contexts. Nine joined the modules as individuals, having heard about the modules through one of the various publicity initiatives and networks outlined above. Twelve enrolled as part of a school response. The school (often in the form of the Social Science department leader) had usually heard about the modules through publicity initiatives or subject networks, and subsequently enrolled a group of teachers in the modules. Thirteen participants enrolled in the second and third modules were from a New Zealand Ministry of Education (NZMoE) project the Senior Social Studies Beacon Schools Project (SSSBSP) established to support senior Social Studies in secondary schools. The Ministry officer in charge of the project considered that the modules were a good way to improve the Social Studies understanding of those involved in senior Social Studies developments and so requested that SSSBSP schools enrol project teachers in the modules.

The three modules were similarly contrasting. The first module comprised five Geography educators examining perspectives in Geography (the GP module), the second nine Social Studies educators studying values exploration (the VEP1module) and the third was similarly made up of a further 23 Social Studies educators investigating values exploration (the VEP2 module). The numbers in the three modules grew as the nature of the module content and process became known to the Social Science community through word of mouth and Social

Science conference presentations. Further, as the Social Studies community proved to be more fruitful in terms of gaining enrolees I decided to focus on Social Studies rather than return to Geography teachers for the third module.

The sample is made up of a range of different types of secondary Social Science educators. The individuals in the sample came from 19 different New Zealand secondary schools, three New Zealand universities, and three private Social Science education contractors. The university and private contractor participants were all former teachers working as advisors, teacher developers and teacher educators in secondary Geography and Social Studies.

The sample ranged from very experienced teachers and educators to quite inexperienced teachers. There were eight school support services advisors, teacher developers, and teacher educators; 15 middle managers and leaders of Social Science departments in schools; seven experienced classroom teachers; five novice teachers in the very early stages of their teaching careers, and two teachers of experience from overseas who were new to teaching in the Social Science field in New Zealand. The sample comprised 30 females and seven males. The ethnicity of participants was not formally recorded. Three participants declared some degree of Māori or Pacifica identity. However, the sample is predominantly Pakeha/New Zealand European in terms of ethnicity.

While the sample clearly includes a relatively wide range of secondary school Geography and Social Studies teachers and educators, the number of participants is modest, and in the case of some of the individual modules, small . However, it should be noted that small samples are common in qualitative studies where in-depth, context-rich data is collected and thus the size of the sample is not seen as an issue (Charmaz, 2006). It is also clear from the figures reported above that the sample includes a stronger representation of more experienced teachers than a fully representative study would. Similarly, there are more females in the study than males, and relatively few non-Pakeha.

The mixed nature of the sample, while a strength in some respects, also resulted in some potential difficulties. Participants encouraged into the study by their Head of Department (HoD) or a MoE project officer raise issues of motivation and power. If teachers were drafted into the project unwillingly, or without full consultation, they may have participated at a

lower level of commitment and involvement just to get the job done. Alternatively, some participants may have perceived that the power and authority of the HoD or the Ministry required them to complete the module and this may have resulted in some trying harder to fulfil requirements than if they had full control over the situation personally.

In particular the involvement of the Beacon School teachers raised two issues. Firstly, schools departments selected to be part of a cutting edge MoE programme were not likely to be typical run of the mill New Zealand secondary school Social Science departments. They were likely to be departments chosen because they had an innovative approach, or were led by an innovative HoD. Secondly, these participants were also in essence volunteered by others and so again motivation and power issues may have been involved.

However, as this is a qualitative and naturalistic study and did not set out to make dogmatic generalizations but rather to report on a particular set of events, these limitations do not detract markedly from the value of the study. Indeed the small size of the sample, coupled with the full data capture online, yielded rich data capable of 'thick description'. That is, the relatively small sample and the detailed, focused and full data collected provides opportunities to analyse in-depth and below the surface rather than in a merely superficial way (Leininger, 1994; Charmaz, 2006)**.**

Online text

The first set of data was from the three module experiences. The volume of data was such that it was not practical to analyse all of it in depth. It is often impossible to examine all the phenomena of relevance to a particular research question when studying a VCoP because of the vast amount of data available (Herring, 2004). It was therefore necessary to select from the large quantity of data available. Herring outlines five data sampling techniques to do so: random; by theme; by time; by phenomenon; by individual or group, or convenience. The selection used in this study was a combination of Herring's theme, time and individual/group techniques. The theme technique requires a researcher to examine and analyse all the messages in a particular theme, or topic, or section of the full online record.

The starting point for the data analysis was the exercise dialogue and discussion section of the online record of each module. Thus a particular aspect or section of the full record was

chosen for detailed analysis. Other aspects of the online record such as questions and answers and messages to the facilitator were not examined in this study. Ongoing dialogue was analysed over the full time span of each module (time characteristic). Herring (2004) notes that using this combination of theme (or section) and time results in a rich and coherent data set, yet one free of extraneous and less relevant aspects of the online record. It does however, often result in a data sample that is, while reduced, still very large. Herring also observes that this approach enables further breaking down into individual and group sampling to provide further focus, if required. Individual and/or group sampling involves focusing on all the messages posted by particular illustrative individuals or groups. In this study typical and atypical individual and group responses to the VCoP approach were selected for analysis in greater detail.

Thus, the most important data source for this study was the online text of the three modules. The full details of the online site and its role in the study are discussed in Chapter 4. The site contained a wide range of data stored electronically and also printed out and filed in hard copy. All of this data were available and reviewed, some of it a number of times, including: administrative (notices, question and answers, messages to the facilitator); instructional (online notes, readings and resources); dialogue data (exercise responses and discussions). As noted earlier the dialogue data were the data set sampled for in-depth analysis. While the administrative and instructional data were also reviewed, it was not subjected to the same depth of analysis. One of the strengths in using an online learning site as a data collection tool was that all data are automatically captured and stored in full. This meant that confirmability was easily demonstrated provided all files were saved. In this study all data were retained both in electronic and hard copy form.

Issues of transferability are best addressed through a strong and representative sample. I suggested above that the participant sample was reasonably representative and it is likely that similar data would be gained when employing the VCoP approach in most schools and teaching communities in New Zealand. The online data is also strong on dependability criteria as a result of the action research and grounded nature of the research methods. As the VCoP approach to TPDL was used as the basis of three separate trials, consistency and replication of data and findings were available within the study itself.

Cohen et al. (2000) suggest that respondent validation and triangulation are both suitable means for assuring the data is credible. Respondent validation is a feature of the online data as it was built into the online community of dialogue process itself. As a participant stated an opinion, presented a salient experience or reported on an insight or an interpretation, the community of practice method encouraged other participants in the online discussion to support or disagree, or ask questions. Thus all data posted in a community of practice online discussion were subjected to scrutiny by all members of the online community. As questions and comments were exchanged, the community as a whole, and the individuals within the community, were actively clarifying and confirming what they meant by the comments posted in the forum. Thus when the researcher reads and analyses the online text in full, the meaning of any particular comment is usually clear.

Not every comment made in the online data became the subject of debate and dialogue. However, most comments did fit into the overall thrust of the online dialogue. Where a very different type of comment was made in an online community context there were options to aid data credibility. Firstly, the comment could be recorded as an atypical view, a negative or disconfirming case. Negative case analysis is a well accepted qualitative technique to aid validity and reliability (Lincoln & Guba, 1985; Tashakkori & Teddlie, 1998). Secondly, in this study I was a participant in the online dialogue, and if the meaning of any particular comment was unclear I was in a position to seek clarification within the dialogue itself. Thirdly, the online dialogues were all open for some time and if the participants felt their own entry was unclear and did not say what they really wished to say, ClassForum allowed participants to edit their entries.

Credibility can also be assured by means of triangulation. In this study the online data triangulated with other sources of data at two points. Firstly, face-to-face focus group discussions were held at the conclusion of each module and I was able to raise key initial findings from each module round with the participants and ask for their comments. This process was both a form of respondent validation, but also another source of data in its own right. Secondly, a final questionnaire including both closed and open-ended items collected further data on the research questions and on important aspects of key themes evident in the online and focus group data.

The online record was also gathered over period of time and with close researcher involvement in the practice community as facilitator, participant and researcher. This was sufficient for the principles of prolonged engagement and persistent observation to develop. Further, the use of three different data collection lenses (online text and observation, focus group dialogues and the final questionnaire) in an ongoing way, mean triangulation and constant comparison principles were also involved.

Focus groups

A second set of data were collected from focus groups. While the data drawn from the online module records was the most important data source in this study, a set of broad questions for focus group data collection was used (refer to Appendix 2) as a basis for each focus group discussion soon after the completion of each module. The focus group data collection employed convenience sampling as the distances involved in attempting to get people together were considerable, and I had to take advantage of whatever opportunities I could to arrange focus group discussions. In the first module 80% of participants took part, in the second 40% and in the third, over the two focus groups held, 61%. Thus, in spite of the difficulties involved, 58% of study participants were involved in focus group discussion. In the first stage of the focus groups each individual completed a written jot sheet of thoughts on each of the discussion questions. Following this an open wide-ranging group discussion took place. The jot sheets were collected and the ensuing group discussion was audio-taped.

The validity of the focus group data is relatively strong. Questions were all open-ended and open to question and redirection by the participants. Participants were, as a result of previous interaction online, relatively well known to one another, and to me. Thus, a climate where people could say what they felt prevailed. Reliability in the focus group data is also strong. Focus groups were run on four separate occasions, and similar and consistent results over time and in different contexts emerged.

The qualitative validity and reliability criteria of confirmability, transferability, dependability and credibility were also met by the focus group data. Credibility is assured in that all focus group jot sheets were retained in hard copy form and all of the open discussions were taped, transcribed and stored. While not all participants were able to take part in the focus groups, transferability was assured through the representative nature of the sample who

did participate. The dependability criterion was assured in that four separate focus groups were run over three separate trials of the approach. Thus consistency and replication of data and findings is available within the study itself. The credibility criterion was met mainly by means of triangulation. Focus group discussions were held at the conclusion of each module and the data was able to be checked against the findings of the online text analysis. Similarly, the final questionnaire data provided a second check.

While the focus group sessions were relatively short, around an hour, they were grounded in the online community experience over a period of weeks and months, and this strengthens the quality of the data collected. The data were also part of a triangulation and constant comparison strategy which similarly supports the reliability and validity of the focus group data.

The final questionnaire

A third set of data were collected from questionnaires and surveys, a common form of data collection used in educational research. In this study a final questionnaire was used to collect what was essentially post-intervention data from participants. That is, the questionnaire was administered well after participants had completed their work with the online modules. There is an extensive literature on questionnaire development, design and use. Johnston and Turner (2003, p. 303) outline key principles in questionnaire construction. These include: ensuring items match the research objectives; using simple, clear and precise items; avoiding leading, loaded, or double-barrelled questions; selecting open-ended or closed-ended questions as appropriate; using multiple items to measure abstract constructs. Cohen et al. (2000) note that questionnaires can be structured, semi-structured or totally unstructured. They also discuss five main types of questionnaire items; dichotomous questions; multi-choice questions; rank ordering; rating scales; and open ended questions (p. 250-260).

Using these guidelines a mixed structured and semi-structured questionnaire using both closed and open-ended questions was constructed. The questionnaire was finalised at the end of the first module. This enabled me to probe emerging issues as well ask about key items associated with the main study research questions. A copy of the questionnaire is included as Appendix 4. The questionnaire was structured around five closed questions and four open-

ended ones. The first closed question used a multi-choice format and asked participants to identify their perception of the level of participation they achieved in the completed module. A second closed question asked participants to rank items that may have made it difficult for them to take part in the module. Each of six potential difficulties was rated on a five point scale from "not (a difficulty) at all" to "a great deal (of a difficulty)."

These two questions were followed by three further closed rating scale questions, each with a following open-ended question. The three closed questions asked participants to describe the extent to which the module experience had influenced their thinking and practice and to provide examples of this. Two open-ended questions completed the questionnaire. The first invited participants to send electronic or paper copies of activities; the second simply invited participants to make any other comments they wished to add.

The questionnaire items aimed to elicit participant opinions and feelings about their experiences with the module and the extent to which approach experiences had affected them. Questionnaire items were constructed toward the end of the data collection phase and so some questions included items focused on issues that emerged from the modules, while others focused on individual participant views. Thus items were grounded in both the process of working with, and in, a community of practice context, and on activities done in the classroom as part of the module. The questionnaire validity and reliability were thus part of a continuous comparison and a triangulation process. Most of the participants had been working with the researcher and fellow participants over a relatively long period of time. The nature of what was being asked was relatively familiar and linked to previous online and focus group data collection.

Cohen et al. (2000) discuss two issues relating to the reliability of postal questionnaire data. Firstly they note that the researcher needs to be sure that answers are completed "accurately, honestly and correctly" and suggest this can be checked by interviewing (p.128). In this study, the focus group interviews and discussions, and questionnaire responses enabled reliability checking. The second issue concerns whether those who failed to return questionnaires would have given the same distribution of answers as the returnees. The questionnaires were posted to all participants and 21 of the 37 returned completed questionnaires a, 57% response rate. There was a robust check on the accuracy of the patterns of responses and thinking of responders and non-responders in this study through

triangulation with the online record and focus data. Again continuous comparison and triangulation techniques provided relatively strong checks on this issue.

Data analysis: Tools and techniques

As discussed earlier in this chapter, the mixed method paradigm selected for this study used a mix of qualitative and quantitative approaches. Creswell notes that some mixed methods research begins with qualitative data and then uses quantitative data to develop and or explain relationships found in the qualitative data. In other studies quantitative data are collected first and used to identify general themes and trends, and further qualitative data are then collected to tease out complexities and/or provide greater depth (Creswell, 2000, p. 516). Both of these approaches were used at a various points in this study.

Mixed methods researchers often use enumeration and typological analyses to identify patterns more easily and to maintain analytical integrity (Miles & Huberman as cited in Onwuegbuzie & Teddlie, 2003). Such analyses also help legitimate findings and prevent researchers from overweighting or underweighting findings (Onwuegbuzie & Teddlie, 2003, p. 355). Four key concepts or techniques are usually employed: quantitizing, unitisation, domain analysis and constant comparison (p. 355). Domain analysis is used as a key analytical tool throughout this study. This term, as used in this project, includes within it the analytical processes of quantitizing and unitisation. Quantitizing qualitative data is an enumeration and typological technique that enables the researcher to convert qualitative data into scores, scales, or clusters. Unitisation is a classificatory or coding process where groups, subsets or categories emerging from the data are established thorough reading and re-reading of the data to form clusters, groups, and patterns, to form more significant domains. The quantitizing and unitisation process together are often referred to as domain analysis.

Constant comparison is also a key aspect of this study. Constant comparison is a process which compares data across a range of situations, times, groups of people, and through a range of methods to identify key issues and categories, recurrent events and activities, and can confirm or expand on the categories and codes throughout the project (Tashakkori & Teddlie, 1998). Constant comparison can also be considered, particularly in this study, as one of the means of triangulating data.

Domain analysis was used at a number of points in this study. In the first instance analysis of the text of the online exercise and dialogue data resulted in a variety of counts and scores for participation and engagement which were tabulated and/or graphed. VCoP researchers often refer to this as *structural analysis* (Job-Sluder & Barab, 2004, p. 385). Structural analysis examines various aspects of the structural and procedural aspects of the online data such as word counts, the frequency and spacing of messages, and completion rates. Second, in order to discuss the efficacy of the VCoP approach in greater detail, systematic analysis of the meaning making, changes in thinking and new actions evident in the online text were undertaken. VCoP researchers often refer to this as *semantic analysis* or content analysis, a process that classifies text according to types of meaning and purpose (p. 385).

Online text

As discussed above, where specific themes, trends, or types of activity are identified as particularly important, greater depth of analysis in the form of domain analysis is often employed. A key element in this study was evaluating the extent to which modules using a VCoP approach were able to develop in-depth thinking in participants. Two main tools, Monologue and Dialogue Discussion Analysis (MDDA) and MDDA Quality Rating (MQR), were used to analyse the depth of thinking evident in online text and online interaction. These tools drew on ideas developed in other similar studies such as: COLLES (Constructivist Online Learning Environment Survey, Taylor & Maor, 2000); ATTLS (Attitudes Towards Thinking and Learning Survey, Galotti, Clinchy, Ainsworth, Lavin, & Mansfield, 1999*)*; and IAM (Interaction Analysis Model, Gunawardena, Low & Anderson, 1997). Work completed in the Talking Heads Project (Chapman, Radmont & Smiley, 2005) was also influential here. These studies make it clear that higher level thinking takes place when participants are:

- reflective and interactive (Taylor & Maor, 2000; Chapman et al., 2005)
- build on the ideas of others and engage in critical dialogue and debate (Galotti et al., 1999; Chapman et al., 2005)
- explore agreement and dissonance and negotiate, test and refine new meaning; and raise and respond to thought provoking and engaging questions (Gunawardena et al., 1997; Muilenburg & Berge, 2000; Chapman et al., 2005)

This study used these ideas to develop a Monologue and Dialogue Discussion Analysis tool (MDDA) which used an eight point coding classification to analyse the quality of online dialogue. The eight categories used drew on the research above but was also based on my experience over a decade of online teaching, and on my detailed reading and re-reading of the online data (refer to Appendix 1 for further detail on this tool). The eight coding categories included two distinctly different kinds of statements. The first four coding categories were termed *personal monologue statements* (PMS) because these were primarily statements made by individuals reflecting their own personal thoughts and interpretations. They were not statements that recognised the presence of others by raising questions, responding to the ideas of others or engaging in dialogue. These latter kinds of statements were termed *interactive dialogue statements* (IDS) and again four separate categories were identified. The full eight categories were:

- opinion statements based on personal experience (PMS1 statements)
- interpretation and reporting statements drawing on the ideas of others (PMS2)
- factual and reporting statements about activities, teaching strategies, and actions (PMS3)
- higher level personal interpretation, evaluation, reflection and application statements (PMS4)
- general dialogue responses (IDS1)
- general questions or stimulus statements (IDS2)
- specific responses to individual comments, reports and questions from other members of the community (IDS3)
- specific questions to clarify issues, deepen thinking and open up new directions and perspectives within the dialogue (IDS4)

(Refer to Appendix 1 for example of the kinds of statement that were coded under each of the categories)

Five aspects of coded dialogue analysis data from the MDDA were then further analysed to report a dialogue quality score for each individual participant using a MDDA Quality Rating tool (MQR). This tool was used to score individuals on five measures as set out below.

- A total 'quality' statement score, reporting the total number of statements scored under all eight coding categories.

- A personal opinion and reporting score, a count of all statements coded PMS1, PMS2 and PMS3, regarded as lower order statements.

- A personal interpretive, evaluative, reflective score, the number of statements made by the individual that were coded PMS4 and regarded as a measure of higher order thinking.

- A community oriented general responses and queries score, reporting the number of statements made by the individual that were coded IDS1 and IDS2 and regarded as lower order community dialogue statements.

- A community oriented specific statements and responses score reporting the number of statements made by the individual, coded IDS3 and IDS4, and regarded as higher order dialogue statements.

These five MQR scores for each individual in the study are shown in tables in Chapter 5. More detail on the nature of these tools and example statements typical of each category are outlined in Appendix 1.

Focus groups

Focus groups are a well established form of data collection widely used in qualitative research. Johnston and Turner (2003) note that "a focus group is a situation in which a group moderator keeps a small and usually homogenous group of about 6 -12 people focused on the discussion of a research topic or issue," (p. 308). They are essentially a form of group interview where the data emerges from the interaction of the group with the researcher, and with each other, as the theme, topic or issue is discussed (Cohen et al., 2000, p. 288). Mixed methods studies often use both open and closed questions to guide the discussion (Johnston & Turner, 2004).

The focus groups were used to explore ideas and emerging findings and to elicit in-depth information on how participants felt about the research topic and the issues raised in taking part in the modules. They also provided valuable data to triangulate and check the validity and reliability of data and findings. Focus group data was collected at the conclusion of each

module. Johnston and Turner identify a number of potential weaknesses of focus groups. Issues of reactive and investigator effects; domination by some participants; and moderator bias were all potential issues for this study. However, the facilitation experience of the researcher, in a wide variety of contexts, and attending to Morgan's "issues to be addressed in running focus groups," helped to ensure these potential weaknesses were avoided (Cohen et al., 2000, p. 288).

The focus group data were analysed using the same unitisation and categorisation, domain analysis and constant comparison techniques outlined in earlier sections. This style of analysis is well suited to the process of drawing out main findings from grounded and naturalistic data (Lincoln & Guba, 1985, p. 344 - 350; Cohen et al. 2000, p. 148-9; Onwuegbuzie & Teddlie, 2003).

Final questionnaire

The questionnaire data were analysed using similar qualitative and interpretive techniques as outlined in earlier sections. For example the closed questions yielded quantitative data that were counted and graphed, and the resulting patterns analysed and discussed. The open-ended data were examined using content analysis, and code and count strategies similar to those used elsewhere in the study.

Module narratives

Qualitative researchers often refer to naturalistic prosaic data, that is, naturally occurring open-ended full-text data, as narrative. Following the content analysis of the text of the exercise and discussion data of the ClassForum record, the outcomes of both the structural and semantic analyses were woven into three module narratives. The approach used in this study is perhaps best described as narrative ethnography, where both the researcher and the researched "are present together within single multivocal text" (Tedlock as cited in Chase, 2005, p. 659). When using this approach the researcher views themselves as a narrator to "develop meaning out of … the material they studied" and "narrate 'results' in ways that are both enabled and constrained" by the embedded and contextual character of the naturalistic data they have collected (Chase, 2005, p. 656-659).

Using the narrative ethnography approach raises complex issues regarding voice, representation and interpretive authority (Chase, 2005). It is important to ensure that the descriptions, interpretations and evaluations made by the researcher are accurate and valid. As discussed elsewhere one of the best ways to do this is to use triangulation to gain a number of takes on the situation. The constant comparison approach of three different rounds of the module investigation and the triangulation against results from focus groups, and final questionnaires help ensure these potential problems are minimized in this study.

Ethics

There is a growing awareness in the Social Science and educational research community of the importance of attending, with considerable care, to ethical issues and considerations in research studies (Cohen et al., 2000, p. 49). Cohen et al. discuss issues of: informed consent; access and acceptance; privacy and anonymity; confidentiality; and betrayal and deception (Cohen et al., 2000, p. 49-66).   In order to ensure that such issues have been careful thought through and addressed it is common practice to require researchers to follow a formal ethics approval process. In this study this was facilitated by the School of Education Ethics Committee of the University of Waikato. Ethical issues fully addressed in the application for ethical approval included: access to participants; informed consent; confidentiality; potential harm to participants; participants' right to decline; arrangements for participants to receive information; use of the information; and conflicts of interest. In addition the proposal addressed legal issues of copyright, ownership of data and materials produced, and responsibility actions (refer to Appendix 5).

Limitations

It is important to review limitations in study methodology so these can be countered, where possible, as the study proceeds. A number of issues have already been discussed in earlier sections. However, two major issues need to be discussed further. First, the scope and complexity of the overall study design was challenging. The issues involved in addressing the role of community of practice approaches, online learning objects and online learning design in achieving quality TPDL are all very complex. Further the amount of data collected in the online record of three modules, four focus groups and more than twenty reflective

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questionnaires is large. Data sampling, identifying key themes and persistent observation strategies have been chosen as ways to address this complexity. Much of this study is highly interpretive and placed a high level of responsibility on me to ensure this was done carefully and accurately. Secondly, there were a number of issues in relation to the teacher sample. These have already been fully discussed above. In particular there were some issues of representativeness, and of power and motivation.

However, in both cases I consider these were addressed through the techniques of triangulation, continuous comparison, prolonged engagement, persistent observation and negative and disconfirming case analysis used throughout the study. These have, I believe, minimized the risks of problems with validity and reliability throughout the study.

Conclusion

This chapter has discussed philosophical and theoretical issues in methodology relevant to this study. It has described the specific methods and tools employed to answer the research questions. A number of potential issues of validity and reliability have been raised and it has been argued that the detailed nature of the study design and its emphasis on multiple methods addressed the issues raised and ensured the study was both valid and reliable. Before moving to examine the study results it is important to discuss in detail the nature of the VCoP approach for TPDL and the modules developed to implement the approach. As the testing and refining of the approach in action is at the heart of this study, a full discussion of the approach and the modules follows in Chapter 4.

Chapter Four: A description of the VCoP Approach to TPDL

The central focus of this study was the application of a virtual community of practice (VCoP) approach to teachers' professional development and learning (TPDL). For this purpose a formal approach or procedure was developed and this chapter begins by explaining its genesis and development. A detailed explanation is given by examining the approach using a plane analysis (Barab et al., 2004). The chapter concludes by explaining how minor aspects of the approach changed as the project unfolded and evidence emerged.

Developing the approach

The underpinning ideas and the initial framework of the VCoP approach to TPDL emerged from my experience in three main areas: curriculum development and implementation; online teaching in a tertiary environment; and professional development work with teachers. Initially my interest focused on in the values dimension of school Social Sciences curricula, particularly on values in Social Studies and on a community of inquiry approach to values (Keown, McGee & Carstensen, 1998; Keown & Crocker, 1996; Keown, 1998a). Later my work expanded into the field of perspectives in Geography and into communities of learners and communities of practice (Keown, 1998b).

My work in the VCoP field began with the development of an online geographical education post-graduate paper in 1997. The paper aimed to assist teachers address the complex issues in moving Geography education beyond positivism to include more post-positivist and post-modern elements and consideration of the role of values and perspectives in Geography (Chalmers, Keown, Peace & Morris, 1998). The paper has been offered for a decade, and has achieved success in introducing a small number of Geography teachers and Geography educators to in-depth professional learning, but the numbers of teachers involved has never risen above three or four a year.

The Geography post-graduate paper experience was consistent with key TPDL principles but did not attract many teachers. In 2000 I raised the idea of developing a medium (or meso) scale professional module as an alternative means of providing in-depth ongoing professional development for Geography and Social Studies teachers, without the high costs

in time and money involved in a graduate paper (or an expensive ongoing NZMoE professional development contract). It is the medium scale (but in-depth and ongoing) nature of this approach that is unique. It is neither a short term transmission approach, nor a top end commitment and big budget one, but somewhere between these two common methods of delivering.

This idea was welcomed by my co-teacher of the paper, Lex Chalmers, and he, Ashley Kent of the Institute of Education, University of London, and I, embarked on a project in 2001 that aimed to build an online site about the Geography perspectives as a resource for the professional development for teachers (Chalmers, Keown & Kent, 2002). In January 2002 a two day seminar introduced a Geography perspectives website to 12 leading Geography teachers and educators, and discussed ways of using it to assist teachers develop their understanding of the perspectives. I subsequently used ideas and approaches developed in Chalmers, Keown & Kent (2002), and at the seminar, to construct a resource and activity learning sequence for an online professional development module based on the perspectives website. The resulting module was run as a pilot in April-May 2002 and again in April-May 2003, with teachers joining in with graduate students to work through the module over a six-week period.

The current study to further develop and monitor this emerging meso-scale online professional development approach began in late 2002. A research proposal was developed during in late 2002 and early 2003. Ethical approval for the project was granted in June 2003 (Appendix 5) and data gathering began soon after.

When the current project began, I undertook intensive and focused reading exploring the key dimensions of the emerging project. The outcome of this literature review is reported in Chapter 2. Chapter 2 and Chapter 3 have also described key theoretical perspectives that underpin the study and this broad range of material was used to develop a prototype approach during the first six months of 2003.

A plane analysis of the approach

Literature suggests that TPDL is a complex undertaking. It must address the wide range of challenging strategies known to be important in successful TPDL. The challenge becomes even greater when the learning experiences are conducted predominantly in a virtual environment. This section explains the intricacies of the approach through contrasting 'planes' or 'foci' of analysis (Rogoff, 1995; Rogoff, Topping, Baker-Sennett, & Lacasa, 2002; Gray & Tartar, 2004). Planes or foci of analysis can be explained as one aspect of a complex interrelated system or activity being brought into 'focus' while other equally important aspects are allowed to 'blur' into the background. This technique is often used by VCoP and activity theory researchers to examine some aspect of a complex activity system somewhat separately, while acknowledging that it is part of an interacting whole and not a totally separate element. These planes can be thought of as 'slices through' the approach from different points, or 'views'. In the following sections three separate planes or views of the approach are explored: the conceptual plane, the module plane and the virtual plane. A number of important terms need to be clarified before these three planes of the approach are explored.

This study uses the term "approach" as its key over-arching descriptive name. As outlined earlier an approach is "a way of considering or handling something" (Simpson & Weiner, 1989, p. 584) or "a means adopted in tackling a problem" (Makins, 1991, p .73). In this study the approach is the overall means or way of handling the problem or issue of providing TPDL using VCoPs. Put another way, the word approach refers to a particular method or means of using VCoPs to conduct TPDL. The term approach here includes a complex collection of concepts, processes, procedures and activities designed to address the TPDL 'problem'.

The first plane examined is the "conceptual plane". The term conceptual refers to something that is abstract and examines high level concepts, definitions and relationships. It is concerned with "the definitions or relations of concepts of some field of enquiry rather than with the facts" (Makins, 1991, p. 333). The particular set of concepts involved in the approach and the interrelationships between them is set out in Figure 3. This conceptual view establishes an overarching framework for the approach. However, as this is relatively general

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and abstract, it does not fully explain how the approach works on the ground at the facts level.

The second plane is termed a "module plane". A module can be defined as "a short course of study," (Makins, 1991, p. 1004). In this study two different short courses of study were used, one focusing on perspectives in Geography, the other on values exploration in Social Studies. However, all three instances use the same module structure and processes. The module plane provides a more concrete process-focused explanation of the approach in action and is presented in Figure 4.

The third plane is named the "virtual plane". The particular nature of this approach to TPDL is a virtual one. The conceptual and structural aspects of CoP outlined above operated predominantly in a virtual form, employing specific web tools. Virtual in a general sense means "having the essence or effect but not the appearance or form of" (Makins, 1991, p. 1714). In a specific computer or web-based context, virtual refers to "being on or simulated on a computer or computer network" (Parker, 2008). The virtual or web-based aspects of the approach are considered separately in Figure 6. The virtual aspects of this approach mean that while it is based on CoP theory, it is not primarily conducted in face-to-face form but rather on a computer network (the World Wide Web).

The conceptual plane

Initially the approach is discussed as if examined from above, using an 'eye in the sky' view. This plane or view looks at the overall layout, shape, structure and key conceptual components of the approach. The literature findings, and findings emerging from the experience of researchers and practitioners, were used to construct a conceptual diagram of the meso-scale ongoing VCoP approach for TPDL used in this study as shown in Figure 3.

Figure 3: A conceptual-structural diagram of the VCOP Approach to TPDL
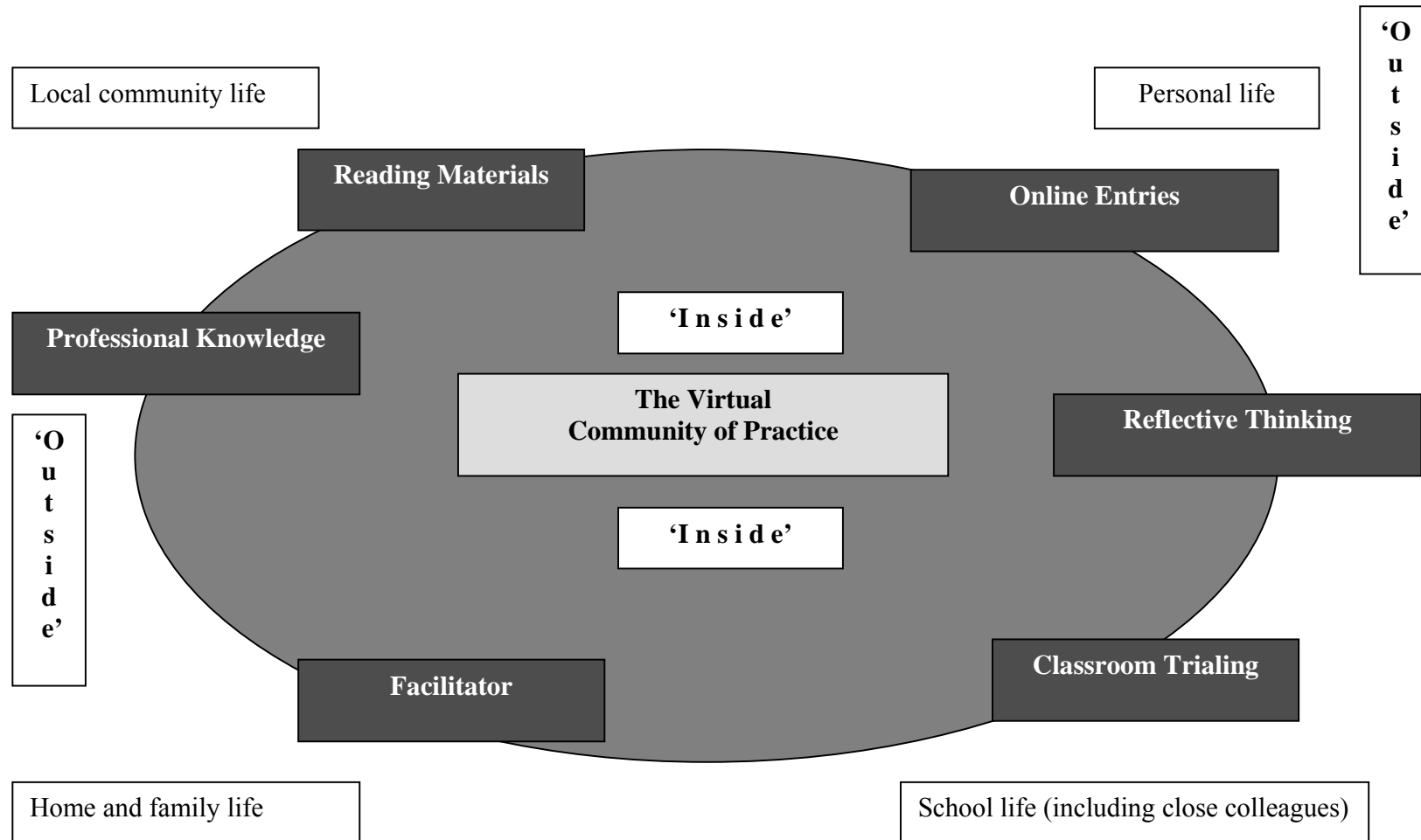
At the heart of the diagram is an elliptical shaded area which represents the virtual world of the online community of practice. The area within the shaded space is labelled as 'inside' the community. This inside space is the engine of the approach as it is the 'site' of the sharing, discussion, and debate of ideas, as well as a place where participants provide support, encouragement and advice to one another. It is a place of public, collaborative community thinking and relating. However, as all the participants in the VCoP are also located in the real world of school, community, family and personal space (shown as the white space outside the shaded ellipse) this is also a vital part of the approach. This aspect of the approach is label the 'outside' although it is closely associated with the inside.

The diagram shows six darkly shaded boxes (with white text) positioned on the diagram as overlapping the outside and inside spaces. These boxes represent the key conceptual components of the approach and associated key types of activity. They are positioned in this way to show that they are active both in the outside world, and inside the virtual community. The way this works can be explained by taking one box and explaining how this particular component is conceived and intended to work.

Taking the "Reading Materials" box as an example, Figure 3 shows this component as partly on the inside because participants are supplied with readings within the virtual CoP site. These are provided as attachments and can be read on a computer or printed off to be read elsewhere. Thus readings are picked up or collected from within the VCoP. However, the reading of these materials by the individual participants actually happens predominantly in the real (outside) world. If an individual reads online they are in one sense still within the virtual world of the VCoP. However, physically they are at a distributed point geographically beyond the virtual space, probably either in a school classroom or work room, or at home in an office or possibly at the dining room table. They are at this point operating outside the web space of the VCoP as individuals in their own outside environment. If the readings were printed off they could be reading the material at school, at home or somewhere else in their wider environment.

After the process of private (or in some instances group) reading of the resources participants bring aspects of their reading of the materials into the asynchronous discussion activity of the VCoP. This happens as they report on aspects of the readings from their perspective in the "Online Entries" aspect of Figure 3. In this act (or actions) participants'

individual views and thoughts about the readings are imported into the public activities within the VCoP. Thus the readings component of the approach straddles both inside and the outside as depicted in Figure 3. The explanation of this process also clarifies that there are overlaps or links between the six key component boxes as well. In this case the readings box is clearly linked to the online entries box.

The reading material box (or component) is also linked with many, if not all, of the other components of Figure 3. For example the thoughts and ideas of the individuals imported into the virtual community via the online entries are shared and discussed. They then become part of further thinking, processing and reflection both by the collective community and by most if not all of the individuals in the community. This is, at least in part, also an aspect of the "Reflective Thinking" aspect of the approach. As the life of the VCoP continues over time some of these processed ideas become the focus of further work by individuals as they think about how they might use the ideas in a classroom context, and could then become part of the "Classroom Trialling" component.

As this discussion shows, this approach is highly situated and there is constant interaction between the inside world of the asynchronous VCoP and the outside world of individual thinking and acting. There are many such interactions between the inside and the outside, and between participants within the community. The nature of these is explored further later in the chapter. However, before leaving Figure 3 I will examine the nature of the action involved in and between other boxes that represent different components of the approach.

The "Professional Knowledge" component is also a key in this approach. While readings are an important source of ideas from 'experts' the professional experiences of all individuals in the community are regarded as equally important. The overlapping component box here represents the action of participants in bringing their field tested outside experiences into the VCoP. These experiences and ideas are, in a way similar to the readings, discussed and reflected upon. They may also be picked up by others in the community and exported out to other classrooms. Or participants may draw on these in constructing their classroom trial and thereby move the idea back out to the outside via the classroom trialling component.

The "Community 'facilitator(s)'" component is also positioned as active both inside and outside the community. The facilitation of a community is, as earlier research has shown,

very important in any approach to online education. The facilitator(s) manage the pace and flow of the community, and provide encouragement and support to the whole group and to individual participants. While this happens largely within the community, and the position of the box shows this, some of the facilitation occurs outside the community in the form of emails, phone calls and personal meetings. Further, in this approach the facilitator is also a full participant in the community, and brings his or her experience of the outside world into the community and inevitably also picks up ideas to take back to his/her own outside teaching world.

The "Reflective Thinking" component is also positioned as both in the community and in the world outside. Individual participants will do a good deal of private thinking and reflecting in the privacy of their own homes or work places, and within their own minds as they read community materials and dialogue entries online. Much of this inner ruminating, while very important for personal professional development, often remains private. On the other hand some of these private thoughts and ideas can and do become public, when a participant chooses to place them in an online exercise space within the virtual community. When this happens, the inner mind monologue thinking becomes part of the public community online dialogue and fully accessible to all others in the community.

It should be noted that the full complexity of all the potential interactions and inter-linking among the elements of the approach are not portrayed in Figure 3, which is a representation of some of the main components of the approach and the way they work. The discussion above has outlined some of the complex interaction between components which will be discussed further in the next two sections, and in subsequent chapters.

The module plane

It is difficult to represent a complex approach in one diagram. In particular, an overall conceptual diagram does not always do justice to the complexity and the subtlety of the processes involved in taking part as a participant. In this section the approach is examined again, but this time with a focus on the processes and the distinct steps involved in working within the approach as an individual participant. Thus this plane or view of the approach is akin to a player or participant view. The approach is always experienced by participants as a

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particular kind of professional development conducted as a module, defined above as a short course of study.

Figure 4 is a diagram that represents the complex processes in the approach. The diagram shows that the approach comprises two distinct cyclic processes. In the centre of the diagram is a long cycle outlining a seven step sequence followed over the full life cycle of the approach, usually over a period of between eight to 15 weeks of one module. On the outer part of the diagram each of the seven steps has a shorter read, reflect, post, respond cycle spinning off it. These two cycles are discussed in turn below.

The seven-step over all module process in the centre of Figure 4 begins with an introduction to the community of practice concept. Participants read about communities of inquiry, learning and practice, and discuss their experiences with such approaches and their thoughts and questions about this approach to learning. The community of practice approach is advocated and negotiated as the main approach for the module. In the second step the topic for the professional development is introduced and the initial ideas of the participants about the topic are invited. Participants are asked to describe the way they see, think, and feel about the topic.

The third step introduces new ideas on the topic. At this point topic notes and a range of readings introduce new ideas and thinking about the topic at hand. While this material is not always totally novel for all participants, the range is such that there will be a good number of new and challenging ideas included. In this step the ideas are often relatively theoretical and mainly literature and research based, involving the participants in serious thinking about the latest ideas on the topic.

In step four participants who have some knowledge and familiarity with the new ideas are invited to share any existing or emerging practical implementation strategies, approaches and activities to the topic that they have already used. Some the ideas, however, may be entirely new and participants may need to talk about what they could do with them. This step can then move seamlessly into step six where all participants think about and begin to devise one

Figure 4: A module – A process view of the VCoP Approach to TPDL

Read, reflect, post, respond.

Read, reflect, post, respond.

1. Community of Practice Introduction

Read, reflect, post, respond.

7. Trial feedback and dialogue

2. Initial ideas about the topic

6. Design and trial of 'new' approaches

Read, reflect, post, respond.

3. New ideas about the topic

Read, reflect, post, respond.

Read, reflect, post, respond.

5. New ideas about approaches

4. Sharing of existing approaches

Read, reflect, post, respond.

Read, reflect, post, respond.

new classroom strategy or activity that will develop some aspect of the topic that is new to them.

Between steps four and six, step five introduces teachers to a wide variety of practical classroom strategies that can be employed to develop new ideas. Participants are asked to select something that is new to them from the wide range of notes, readings and resources outlined, then to design and plan a teaching sequence to trial it in their own school or community. Similarly, participants can select an idea or strategy suggested by another community member that is new to them, and decide to trial that in their own classroom.

In step six the newly devised idea is implemented in a classroom and the outcomes closely observed. The outcomes of the trial are then fed back to the full community and discussed in step seven. Throughout steps six and seven participants reflect on their own work and the work of others, and seek to find practical ways of translating the ideas introduced in steps three and five into action. They are also able to provide advice and support to one another in finding the most practical and productive ways of implementing new ideas and approaches.

A read, reflect, post and respond cycle occurs at each of the seven points described above. This repeated cycle is a central feature of this approach. The post and respond part of this cycle is particularly important and takes place within the exercise and discussion part of the approach as outlined in Figure 4. The nature of this process is outlined in Figure 5.

The initial reading aspect of the process may involve notes and readings introduced by the facilitator, or it may be thoughts, ideas and experiences posted into the virtual community by the participants. Indeed in some instances both are used.   Participants are then asked to reflect on these initial ideas and post in their thoughts and reactions. Often specific questions or activities devised by the facilitator are used to structure thinking at this point.

Participants are then asked to respond to the ideas of other participants who have posted reflections and thoughts into the online exercise and dialogue. These responses can affirm, question, challenge or move the discussion in a new direction. At this point the discussion is much more open-ended, democratic and participant driven. The facilitator at this point is predominantly just another member of the community of learners.

Participants are expected to make at least two postings of consequence in the exercise dialogue discussions. However, as people post thoughts and reactions into the community dialogue, further ideas and possibilities are introduced, and frequently this can lead to a further round of reading, reflecting, posting and responding, at least by some participants. Thus this cycle can be repeated a number of times if members of the community wish to do so.

Figure 5: The module resource and activity sequence

Content 'chunk'	Objective	Description
1	To introduce the module	An introduction to the technical procedures, the content and methodology of the module
2	To open up thinking about the topic	Participants stating and discussing ideas about the way they see some of the key CoP concepts, terms, processes at outset - and before they do any substantive module reading
3	To complete professional reading and thinking on one aspect of the topic	• Reading and thinking about topic notes online and selected text materials in either hard copy or online form • Completing an online written exercise in relation to the reading and thinking above • Completing some online dialogue about the topic with other members of the learning community
4	To complete further thinking and dialogue on existing approaches and ideas about possible new options	• Completing an online written exercise in relation to further thinking about readings and reactions to readings and sharing of existing practice, and experiences in relation to new ideas • Completing some online dialogue about the topic with other members of the learning community
5	Propose ideas about how one new idea about the topic could be implemented in the classroom	• Completing an online written exercise outlining one implementation idea • Completing some online dialogue about ideas and issues in implementing suggested activities in classrooms
6	Reporting back on and discussing together classroom trials of the ideas outlined in 5 above	• Reporting back on classroom trial of one idea or activity in an online written exercise • Completing some online dialogue about ideas and issues arising from the various classroom trials

Another way to look at the overall module process is to consider it as learning and teaching sequence. The overall module task of finding out about, thinking through, discussing and trying out new ideas is structured and organized into six main chunks or topics as detailed in Figure 5. In topics two to six the participants complete five written exercises which fulfill three main purposes. First, they are an opportunity for participants to manipulate or work with the reading material as individuals. Second, they also provide the learning community with raw material for further thinking in the form of a range of ideas from a variety of people. As participants state their thoughts and ideas on and about the reading material (and their own practical experience with similar ideas and approaches), they are putting ideas into the learning community forum. A number of these will open up new thoughts and ideas for individuals.

Third, participants are then able to discuss these contributions and the ideas, and issues they raise, as part of the on-going community dialogue. This is a very important aspect of the approach. The reading, thinking and writing involved in the first two purposes outlined above are predominantly individual-centred activities. The individual does his/her own reading, thinking and writing about the topic. This includes both the readings and the comment on the readings and related issues by other participants. This process is very much like the sequence a student follows in completing a written correspondence course. The third dimension, however, discussing ideas with others, is very important because it simulates, at least to some degree, the kind of discussion of ideas and issues that is able to take place in a face-to-face course. It also adds in the relational and dialogical elements of learning important in community-based learning pedagogies.

The virtual plane

The design of the online site for any online professional development is a crucial issue (Barab et al., 2004). Good concept and process potential in a virtual environment can quickly come unstuck if the online site design itself is inadequate. While the nature of much of the online activity involved in the approach has been outlined in the previous section, the conceptual and module views of the approach do not provide much detail on the nature of the online site.

The online learning platform is the main 'site' for the modules, the virtual spaces within which the CoPs operate. There are a number of software platforms that offer a virtual classroom environment, often termed Learning Management Systems (LMS) (Coates, James & Baldwin, 2005; Downes, 2005; O'Hear, 2006). The LMS used in this study was "ClassForum", largely because it was readily available to me and the participants through my University. At the point of instigation of the study the University of Waikato had established a designated ClassForum site open to the wider community beyond the closed university system for enrolled students. This site, run by the Waikato Innovation Centre for electronic Education (WICeD), was called the *WICeD Forum – Communities of Practice and Interest.* I was fully conversant with this platform having used it as a teaching tool for more than five years.

As reported in Chapter 2, LMS software was developed in the 1990s to create interactive web based teaching and learning platforms. The University of Waikato began using the ClassForum LMS in 1996. The initial product used was developed by WebCrossing Inc and known as WEST, later renamed TopClass. In 1998 ClassForum 1.0 was released as an add-in component to TopClass and was based on Discus from Discusware (Moodie, 2006). An improved version, ClassForum 2.0 was launched in December of 1999. While the University and WebCrossing Inc continued to work together to produce new versions of ClassForum, the *WICeD Forum* site used in the study continued to use ClassForum Version 2.0. This version of ClassForum, while not as sophisticated as many other platforms available today, has the same basic characteristics as other well known virtual classroom platforms such as Blackboard and WebCT, and more recently Moodle.

The platform is described as "a collaborative discussion based system" that works well for teachers and students at Waikato (Moodie, 2006). ClassForum 2.0 has two main components. Modules or courses in ClassForum are made up of 'folders' and 'discussions'. The sites for the modules in this study used both of these as set out in Figure 6. Folders can contain text, other folders and/or discussions. Folders are used to provide information to participants and they cannot be manipulated by participants. Discussions on the other hand are specifically designed to allow participant input and to enable asynchronous dialogue.

The base online module used in this study was built in February- March, 2003 so a trial version of the module could be piloted by students in the geographical education graduate

paper in the first semester of 2003. The basic structure of the site was grounded in my experiences of teaching online between 1997 and 2002 and in the literature on successful online CoPs outlined in Chapter 2. While the basic structure of the online site was established in 2003 it was refined through the three rounds of action research and between June of 2003 and December, 2004. This is discussed later in this chapter.

Participants accessed their online module site through the University of Waikato *WICeD Forum* site by logging into the WICeD Forum site via their internet browser. The design of the module sites is shown in Figure 6. This diagram is a map showing the overall structure and shape of the module sites. At the top level participants had access to five main folders:

- Overview
- Notices
- Topics
- Exercises
- Common room/help desk folders

The precise lay out, naming and content of folders varied slightly between modules but the same general structure was used in all three.

The first of the five folders, the "Overview" folder, typically contained three further folders, one outlining the objectives of the module, a second containing a diagram outlining the programme, including dates, and a third including any other administration such as the composition of internal groups. The second top level folder contained "Notices". This folder is added to regularly throughout the module as new issues and information needed to be addressed. Class forum uses a flag to alert to participants when the new messages have been posted. Messages in this area are post only by the authorized community facilitator(s).

The third top level folder "Topics" contained a number of second level folders, one for each topic in the module. Each second level topic folder usually contained two third level

Figure 6: Module virtual plane - Web site structure
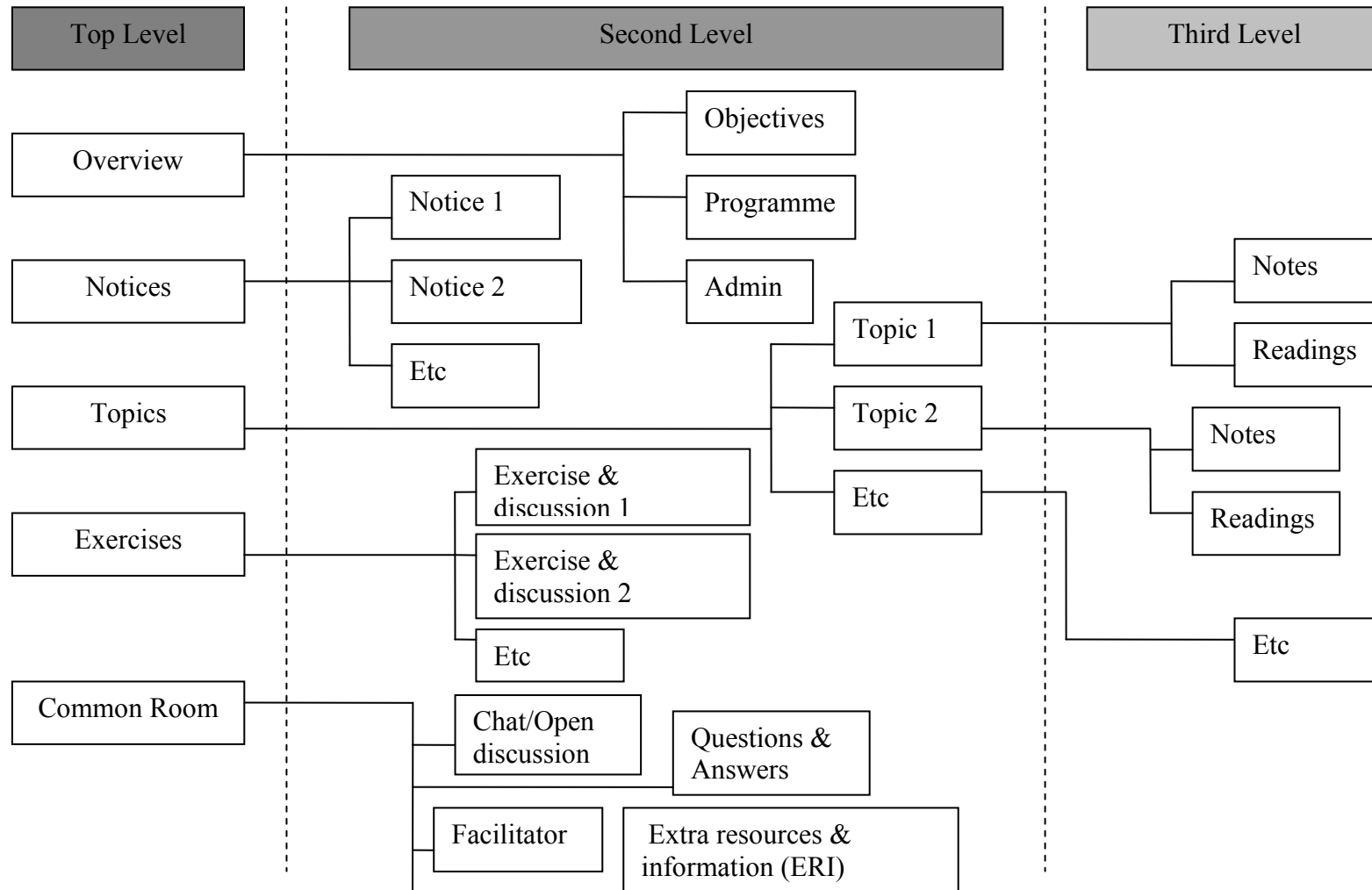
folders. One contained notes about the topic, recommended and/or referred to additional readings, and pointed participants to the appropriate exercise and discussion space associated with the topic. The other contained the readings for the topic as attachments. Participants accessed and read or printed the readings from this space.

The fourth top level folder was the most important in the operation of the approach. It contained the main exercise and discussion spaces for each module and was, therefore, the main space in the module site where participants posted their ideas and interacted with each other. The "Exercises" folder contained a number of second level discussion spaces, one for each topic. Initially participants typed their initial ideas to the exercise questions into a dialogue box. The facilitator, or other participants, then provided feedback, raised questions, and posed issues. As the exercise unfolded participants made further contributions in a wide ranging dialogue about the topic.

The fifth top level folder, the "Common Room", or the "Help Desk" was also a very important one providing participants with a number of spaces where help and additional facilities were provided. In the 'chat' or 'open discussion' section of this folder, participants are able to make discussion entries to introduce themselves to other members of the learning community and other informal social interaction could also take place here. Further, this could be used as an open ended dialogue space where participants, or the facilitator, could raise issues for further discussion. This was a 'coffee table' or 'staffroom' kind of space where issues could be discussed less formally than in the exercise and discussion folder.

In the "Question and Answer" section of the folder participants could post a message at any time when they have a particular question or problem for which they needed an urgent answer. Any other member of the learning community could respond, for in reality often another community member had the answer to the question and was able to provide it very quickly. If an answer was not forthcoming from the group within a reasonable period of time the facilitator would come in with an answer. A second level 'facilitator' space was also included in this folder. This was an important location where participants could talk to the module facilitator in private. Any messages placed in this area could be read only by the participant who wrote the message, and the facilitator. In essence this space simulated an office meeting or a private conversation with the facilitator. Finally, another second level space in the common room, the 'ERI' (extra resources and information) folder, provided a

place where extra resources, information, and materials could be posted when required. As the module proceeded, there were often occasions when some additional resource material, readings, or other items seemed necessary. This space provided a location where such material could be posted by the facilitator, or by participants.

What changed during the two years of trialling?

The basic approach as outlined in the three plane descriptions above was maintained throughout the study. However as this was a grounded and ALAR study some minor tuning of the approach developed in response to the outcome of each of the first two module trials. These adjustments and changes are outlined below.

Initially it was thought that a meso-scale approach could operate over a four to six week time frame. However, this proved to be much too short in the first module and the timeframe was extended considerably for the second and third modules. In the original design of the approach most of the readings were provided in hard copy form. However, participants in the first module felt this was out of keeping with the online nature of the approach and in modules two and three all materials for the module were provided digitally as attachments.

In the third module, where the numbers involved were larger, a buddy / critical friend approach was introduced in the discussions in order to improve the speed and frequency of feedback to individuals. This was in response to the view of participants in modules one and two that on occasions they felt that the community was not providing enough feedback to each other to maintain a high level of interest and enthusiasm for dialogue.

As explained above there were also minor changes made from module to module in the naming and placement of some of the folders and discussions in the online site design. These changes were intended to make the site easier to navigate and use. However, these changes were minor and in the order of fine tuning. They did not amount to any significant re-engineering of the approach. Further details on changes over time are discussed in later chapters.

This chapter has explained the nature of the approach used in this study in some depth. The following chapters move on to report what happened when the approach outlined in this chapter was put into action with three different groups of Social Science teachers and educators.

Chapter Five – Module Narratives

Introduction

As outlined in Chapter 3 the results section of this study employs a narrative approach to tell the story of individuals and groups as they engaged with teacher professional development modules using the VCoP approach. The next three chapters tell the story of the application of the VCoP approach from three different perspectives. This chapter tells the story of the modules themselves. Chapter 6 focuses on the stories of illustrative individuals and groups and Chapter 7 reports on the reflective stories told by participants as they reflect back on their experiences with the approach after they had completed their work in the TPDL modules.

This opening narrative chapter is presented in three sections, one for each of the three modules. Each section is set out in a similar way, beginning with an explanation of the way in which the module was set up and run. The second part of each section uses structural analysis to examine the flow, rhythm and patterns of participant engagement in the modules (Job-Sluder & Barab, 2004; Wenger et al., 2002). The third part of each section employs semantic analysis (Job-Sluder & Barab, 2004) and domain analysis (Cohen et al., 2000) to focus on the quality of community participation, and the levels of thinking and dialogue.

Module one narrative: Coming to terms with the Geography perspectives (GP)

Setting up

The first module held during June and July of 2003 was widely advertised in the geographic education teaching community and via the University's professional development networks. Disappointingly, only five individuals enrolled in the module. Nevertheless I felt it was worthwhile making a start on the project even if the numbers were small. Indeed, in hindsight it was probably best to think of this module as a pilot run for the approach, and as a way of fine tuning the approach in readiness for the two more substantial second and third

modules. The overall module design was outlined in Chapter 4 and the following paragraphs explain the particular content and processes used in the first module.

The Coming to Terms with the Geography Perspectives module (henceforth referred to as GP) was organized in eight blocks: an introduction and seven topics. The introduction began with a mail out to participants sent out a month prior, comprising an introductory letter, a reading from Chalmers, Keown and Kent (2002), and two brief technical papers I had written. The first technical paper provided detailed instructions on using the online learning environment and the second introduced community of practice concepts and processes. The introductory material also asked participants to go to the "Brief Biography" section of the module and type in a short entry to introduce themselves to other members of the online community.

The first module topic, "History and Context" provided a brief history of perspectives in New Zealand Geography and outlined key points relating to the current focus on perspectives in school Geography. The topic notes referred to the Geography position paper (New Zealand Board of Geography Teachers, 1999), Chalmers, Keown & Kent (2002), the Ministry of Education Statement on Perspectives (NZMoE, 2002), and the notes section of the NZQA achievement standards for Geography (NZQA, 2004). Participants were asked to read this material as background but were not expected to make any formal entries in relation to this topic.

In the first part of the second topic entitled "Defining Perspectives" participants were asked to post three statements. One outlined their understanding of the word perspectives and in the two others to discuss similarities, differences and issues emerging from the initial entries. In the second part of the topic online notes introduced participants to a view of the Geography perspectives based on the work of Professor Lex Chalmers in developing the *University of Waikato, Website on Geography Perspectives* (Chalmers 2002) as a way of summing up the topic.

Topic three, "The Comfort Zone, familiar perspectives," introduced the participants to a range of possible perspectives beyond the standard positivism or scientific method perspective that dominates much school Geography. Then participants selected one of seven Geography perspectives outlined in the Waikato website and posted an entry explaining their

existing understanding of the perspective chosen. Following this, they were asked to make at least two further discussion entries to dialogue with one another about their views of the perspectives.

Topic four "Pushing the Boundaries, new perspectives" introduced participants to the geographical literature on perspectives in Geography through the Waikato website on Geography perspectives. In the exercise for this topic they read the material on the web site relating to the unfamiliar perspective they had chosen and wrote 250 to 350 words outlining five or six key points to explain the perspective to a teaching colleague. In a second entry they listed some expressions or ideas that needed clarification and discussion, and in two further entries discussed ideas and issues further.

The topic notes for the fifth topic, "Perspectives in the Classroom," included material from the GeoVisions Project (Lambert, Martin & Swift, 2005), outlining ways in which some UK teachers had incorporated alternative geographic perspectives into their classroom work, and suggested participants do some similar 'blue skies thinking' around the Geography perspectives. In their first entry in the exercise for this topic participants outlined ideas on how they might incorporate one perspective into a Geography activity, lesson or topic in a secondary school classroom. Participants then discussed ideas and issues raised in two further entries.

Topic six did not involve any new material but asked participants to trial some lesson or activity material incorporating a new perspective in a classroom situation. Participants posted details about a small activity they had completed in the classroom and explained what happened, how students reacted, and how well the teacher felt this initial attempt to incorporate the new perspective into classroom teaching went.

Structural analysis

This section tells the story of the overall shape and flow of the module in action. It examines the overall sequence of the approach and the major patterns of participation and engagement over the life of the module. At some points in this section illustrative quotations are used to provide some examples of reported experiences and thoughts expressed in relation to the way the module was unfolding. Participants began by entering their biographies and

four of the five people enrolled completed this task in the four days leading up to the opening of the module. Participants started the module in a spirit of optimism. Most spoke enthusiastically about the potential they saw in the module. Some saw the module as an ideal opportunity to learn new ideas that would benefit their work with students.

> I think I am going to enjoy the opportunity to learn something different and then be
> able to use that learning to benefit my students.
>
> Participant 31

> I am interested in this course because this is the way forward, but I am still looking
> for the best ways to teach these concepts to teenagers. It will be a challenge!
>
> Participant 37

Some saw the module as an opportunity to develop online learning skills as well.

> This is a wonderful opportunity to learn about online learning as well as to discuss
> issues close to the heart of teaching in the Social Sciences, especially Geography.
>
> Participant 33

The way each individual engaged with the module site was analysed. The number of posts by each person in the module was recorded. There was an expectation that each participant would post one message in the introductory brief biography 'space' (where space equates to online posting location), and three messages in each of the five exercise dialogues. Posting in the open dialogue, question and answer and the talk to the facilitator(s) spaces was optional. All participants in the study were assigned a participant number. The full list of 37 participants over three modules was listed in alphabetical order and assigned a number according to their alphabetic rank. Those who took part in the first module were participants 12, 30, 31, 33, and 37.

The analysis of postings to the module showed that participants 12, 31 and 33 were reasonably active, making between 13 and 16 posts while participants 37 and 30 were less active with just seven to nine entries. The two facilitators involved in this module on the other hand posted at a much higher rate, 26 and 39 entries respectively. Two participants posted in all six of the compulsory sections of the module and three posted in five. However, discussion activity was lower than expected. The expectation at this point, was at least 16

dialogue entries from each person in the compulsory exercise sections of the module. The two most active participants made 13 and 12 of the posts expected in the exercise spaces (81% and 75% of the entries expected). Two participants managed a 56% post rate (each with nine entries) and one community member managed just 6 entries, 37% of the expected posts.

Figure 7 and Figure 8 present the pattern of activity in the module in graph form. These two figures include the open dialogue and exercise data only, as these spaces were the key ones in evaluating the effectiveness of a module. The data presented in the Figure 7 extends considerably beyond the four weeks originally planned for this the module. This, along with the data presented above, provides clear evidence that the module did not proceed as planned. Figure 7 also shows that there was a considerable degree of activity in the module in weeks one and three but thereafter activity slumped to a very low level. As the first three weeks of the module contrast sharply with the later weeks, Figure 8 provides a focus on the activity pattern for each person involved in the module over the initial three weeks only. The data as presented in these two graphs will now be used to tell the story of the module as it unfolded.

The module began promisingly and the first week was a busy one. There were 24 dialogue messages posted during the week. Fifteen of these messages were posted in the first exercise discussion and six in the second. Three of the five participants posted thoughtful entries within the first two days and a fourth came into the exercise in the middle of the week. Unfortunately, one participant was not able to enter anything until the last day of the first week due to field trip commitments. The group outlined ideas on the perspectives, and the ways in which they and their colleagues thought about and used them, with considerable sophistication. Participants quickly and easily began to question each other and debate issues. Only one member of the group posted two follow up dialogue entries as suggested in the exercise instructions. However, three participants posted one follow up entry each and as semantic analysis in the next section shows, these postings were of a high quality often discussing a range of complex issues, questions and ideas. As module leader, I posted three entries and the second facilitator one.

Exercise 1 thus unfolded more or less as planned. All participants took part promptly and thoughtfully within the first week. While the number of entries was less than expected in the module design, the discussion of the topic was comprehensive and thoughtful. This initial

discussion was able to address key issues involved in teachers' perception of, and issues with, the concept of perspectives at some depth (see pages 114-115).

Figure 7: Module 1 - Dialogue entries by week and by exercise

(n = 5)
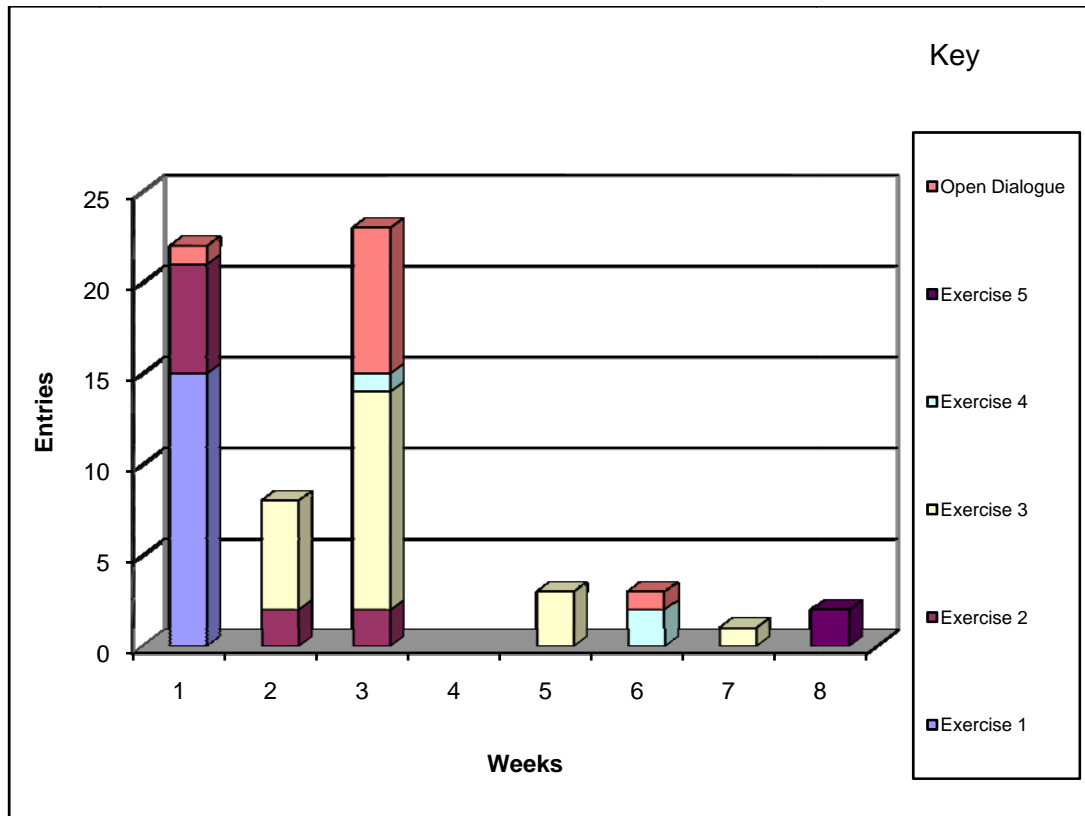
Figure 7 shows that six messages related to Exercise 2 were posted in the first week and a further two in each of weeks two and three.Four of the five participants completed the first part of this task, outlining a perspective, within the second half of the first week. The fifth member of the group posted their initial entry six days after the substantive work in the module by other participants had finished in week three.

The explanations, as in Exercise 1, were completed thoughtfully (as shown in the semantic analysis in the following section). However, only two members of the group were able to post a follow up reflection and one of these was actually posted in Exercise 3 by mistake. The two facilitators also entered one feedback and discussion entry each within the initial five days of activity on this exercise. Thus, the second exercise was only marginally successful. While each participant completed an initial entry and there was some discussion of these by

Figure 8: Module 1 - Dialogue entries by person first three weeks

(n = 5, plus 2 facilitators)
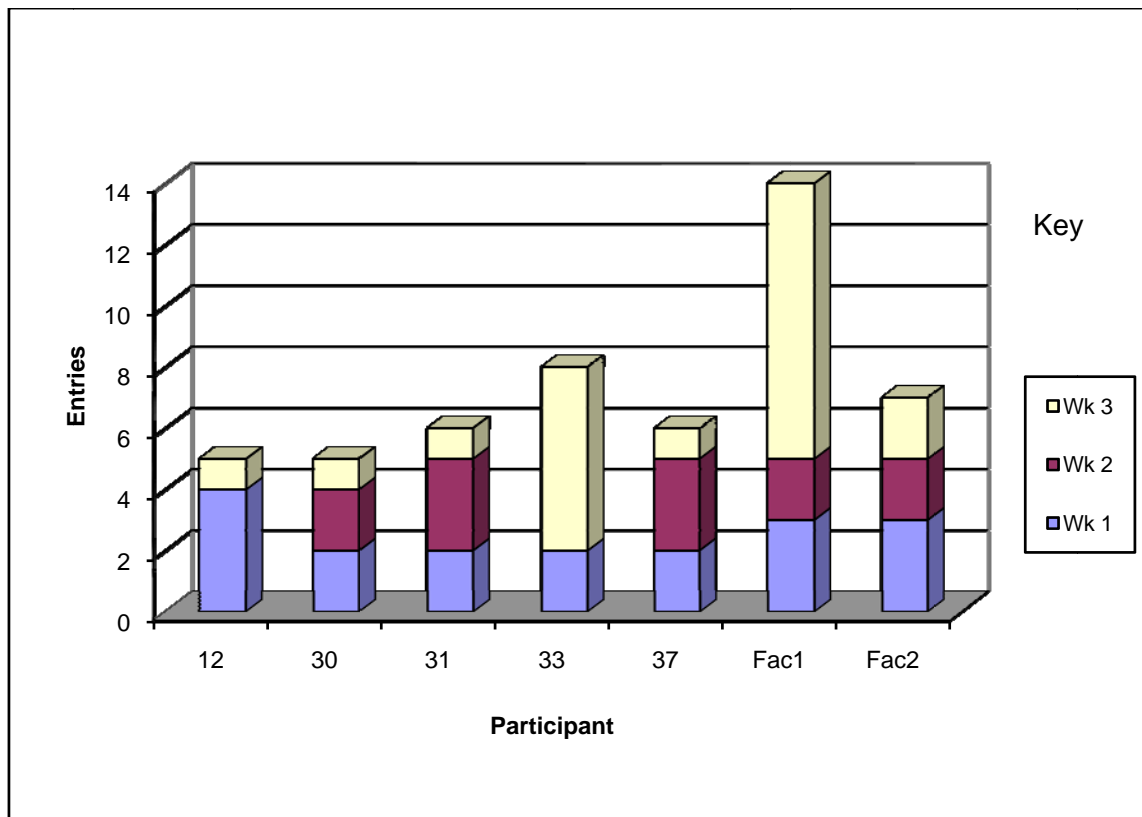
two participants and the two facilitators, there was no discussion beyond an initial entry for three of the five participants.

In part this was related to the absence of two participants from the module in the second week. Both were travelling all week and were unable to take part in the module. Indeed one of the participants had gained a study award and was effectively out of the module for weeks two, three and four. The remaining three participants posted just eight messages in the week and the facilitators four. The impetus in the module slowed considerably at this point. Four members of the group were able to complete the third exercise, mostly in weeks two and three. The fifth member was overseas on a study award and was not able to complete this task until week five. Entries showed that participants found the website interesting and informative and they were able to describe the perspective they chose relatively easily. There was also some useful discussion among participants and facilitators on the meaning of specific terms and concepts and about similarities and overlaps between perspectives took place.

Discussion postings in week three included a larger number of entries for Exercise 3 and also a burst of discussion in the open dialogue space. So in this sense week three was relatively successful, and to a degree represented a significant revival of activity following the slow second week. As Figure 8 shows, participant 33 was quite active in this week after an absence from the module in week two. The strong open dialogue in week three was between this participant and the two facilitators and covered a range of issues, but focused most strongly on a debate about the extent to which professional development should be theoretical and deal mainly with teacher thinking, or be more practically oriented and include ideas about implementation as well.

The module then went completely silent in week four and never recovered. It should be noted that as this was the final week of term two, teachers would have many end of term tasks to attend to. As Figure 7 shows there were just three messages in weeks five and six, one in week seven and two in week eight. Three participants were involved and a small amount was done in Exercises 3, 4 and 5. Two participants (31 and 33) did not post any messages at all in Exercises 4 and 5 during the eight weeks included in this analysis.

Another pattern of interest in examining the overall shape, structure and flow of the module was the word count which can help track the commitment of individuals to the module. Word guidelines were provided in the module and the extent to which individuals achieved this can provide another measure of commitment to, and participation in, the module. The five participants in the module contributed 5274 words to the online exercise dialogues over eight weeks, with the majority of these posted in the first three weeks. Participants 33 and 37 were the most prolific contributors (1283 and 1266 words respectively). Participant 31, in contrast, contributed just 714 words. The average level of words contributed was 1055. Exercise instructions suggested each individual should post around 2500 words throughout the module. However, as the momentum of this module faded markedly after the first three weeks and two participants made entries in just three exercises and another two in four, individual word counts were well below expectations. Two participants posted 51% of the nominal expectation and one (31) posted just 29% of the words expected. Thus the participants of this first module were well short of the engagement and participation expectations set.

Figure 9: Module 1 - Flow of events planned verses actual

PLANNED
ACTUAL

Planned		Week		Actual
Biographies		Week -1		
				Biographies
Ex 1		Week 1		Exercise 1
Ex 2		Week 2		Exercise 2
Ex 3				
Ex 4		Week 3		
Ex 5		Week 4		Exercise 4
Ex 6		Week 5	Exercise 3	
		Week 6		
		Week 7		
		Week 8		Exercise 5
		Week 9		
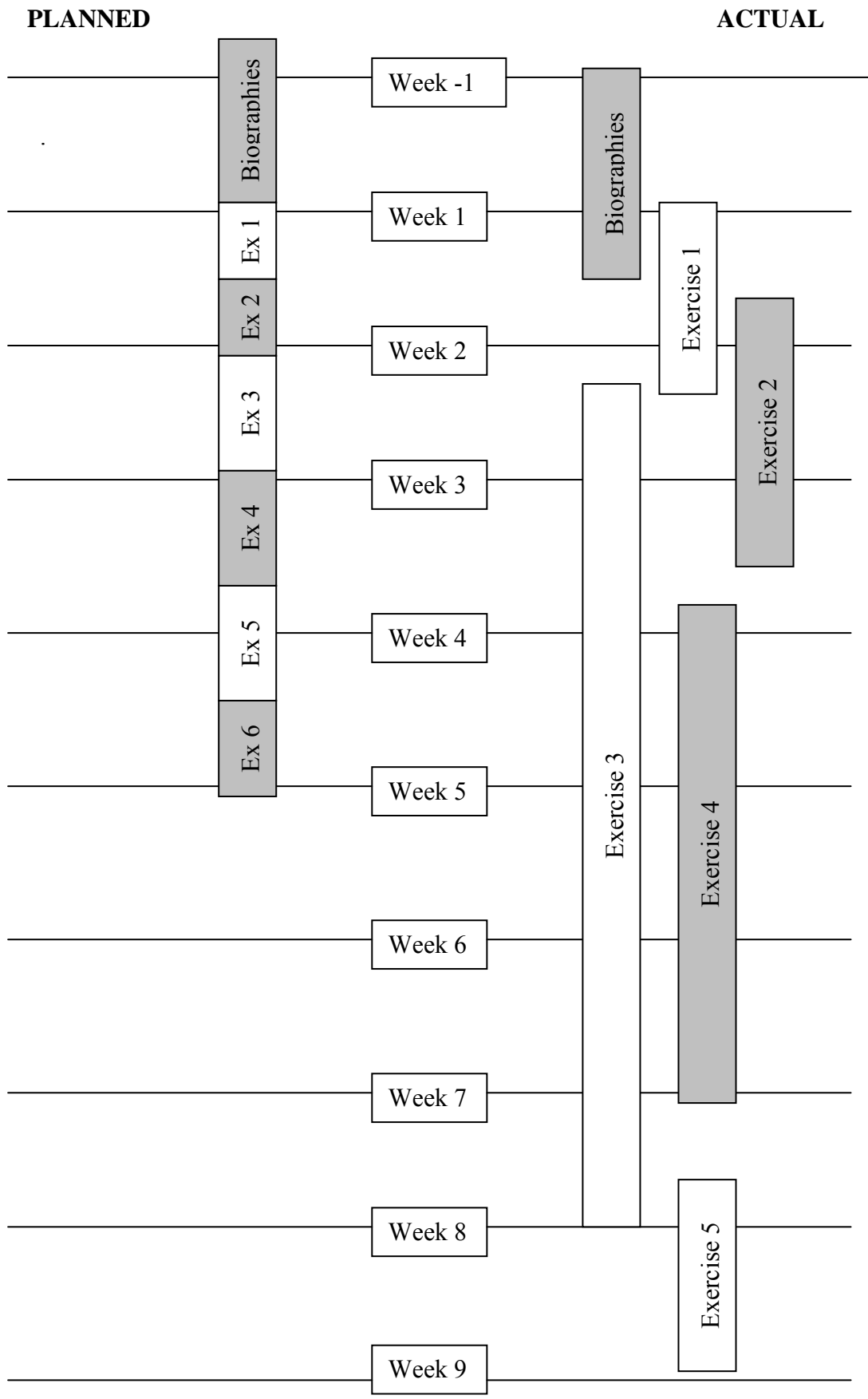
As a final look at the structural analysis of the first module Figure 9 plots the expected time allocation for each part of the module against the actual time span spent on each part. The figure shows a marked difference between the expected and the actual pattern of work in the module providing further evidence that the module did not work as planned. Participants were not able to do exercises at the pace hoped for and exercises became very drawn out. This in turn meant that the interesting discussion and dialogue of the first topic was not repeated at any other point in the module. Topic three did show some promise in weeks two and three but did not achieve the energy and commitment levels shown in topic one during the first week.

Semantic analysis

The number and frequency of postings, word counts and the rhythm (or tempo of a CoP over time (Wenger et al., 2002, p. 62-63) are important aspects of the story of a VCoP module. However, another important aspect of a VCoP approach is the quality of the dialogue and community interaction within the module. This section of the study uses semantic, content and domain analysis techniques as discussed in Chapter 3 to analyse and report on the nature of discussion in the online text of the module. The focus here is mainly on the depth of thinking and reflection engendered within the discussion and dialogues and the level of skill developed in community dialogue. The two tools used here were the *Monologue and Dialogue Discussion Analysis* tool (MDDA) and the *MDDA Quality Rating* tool (MQR) as outlined in Chapter 3 (refer to p. 80-81 and Appendix 1).

The figures in Table 1 report on the quality of the exercise and dialogue entries of each participant. Each posting made in the module was analysed using eight coding categories of the MDDA (refer to Appendix 1). Following this the coding patterns for each individual were further analysed using the MQR (refer to Appendix 1). In Table 1 the five measures of the MQR for each participant are presented. Column two records the total number of statements scored in the MDDA analysis. As explained in Chapter 3 and in Appendix 1 each substantive point or argument presented by an individual was recorded either as a personal opinion or comment statement (PMS); or as making a significant contribution to the ongoing discussion and dialogue of the community of practice (IDS). Participants 12 and 33 made the highest number of statements (27). Two participants (31, 37) made 22 and 21 scoring statements and participant 30 made the least number of statements (17).

Table 1: Module 1 - Dialogue quality

Participant	Total statements scored	Personal opinion & reporting	Community general responses & queries	Personal interpretive evaluative reflective	Community specific responses & questions	Total Quality Statements (Total for columns 5&6)
12	27	12	2	2	11	**13**
30	17	11	4	2	0	**2**
31	21	12	4	0	5	**5**
33	27	17	5	0	5	**5**
37	22	12	5	2	3	**5**
Average	**22.8**	**12.8**	**4.0**	**1.2**	**4.8**	**6**

Columns three to six record the nature of the coded statements for each individual. The third column records the number of statements of personal opinion, and those which report on particular factual points made in the assigned exercise tasks. The fourth column reports the number of general dialogue community statements made. These were often simple general statements of support and encouragement for the community as a whole. Both of these columns report on what can be regarded as lower level contributions to the community (Chapman et al., 2005). The fifth and sixth columns record the number of statements where individuals went much deeper than this (Chapman et al., 2005). Column five reports the number of PMS statements judged as interpretive, reflective, and evaluative. The sixth column the records the number of IDS statements which gave substantive feedback to named individuals; posed challenging questions for named individuals; or raised issues for further discussion and debate within the community. As the instances reported in columns five and six are all higher order statements these are totalled in column seven as the total number of quality statements made by each individual.

Table 1 shows the number of lower order statements (personal opinions and reporting; general statements and queries) made by individuals in columns three and four. The results for each participant are fairly similar, ranging from 14 to 22. However, there is greater contrast in the higher order statements made, as displayed in columns five and six. In column seven participant 12 stands out with 13 quality statements, well ahead of the between two and five quality statements registered by her peers. In particular, participant 12 stands out (in column six) as a person who gave a very high level of feedback to, and questions for, other members of the discussion community. For example in her very first entry in the module, in

response to the exercise task post an entry explaining "your thinking on what geographers and Geography teachers mean by the term perspective" she stated:

Geographers are interested in the relationships and interactions between people and the environment and I guess to understand the nature of that relationship we need to understand how different people look at and interpret the world i.e. their perspective. If we don't appreciate or take into account different perspectives it seems to me we have potentially neglected to understand the relationship many people have with their environment. Understanding perspectives brings a far wider appreciation of these relationships. Perspectives, a pathway to greater understanding or something that we should has been doing anyway? If we have been looking at Geography in a narrow positivist way, why has it taken until now to get to this point, historical perspective please! Have some people always approached Geography from differing perspectives? Oh dear, starting to generate more questions than answers. Must be time to sign off!

Participant 12

This entry is typical of participant 12's quality thinking and her ability to enter quickly and thoughtfully into dialogue and pose questions for the community. In her second entry she also showed the ability to respond to others and seek dialogue with them.

I'm not sure I know exactly what [Participant 31] means about Geography teachers always encourage students to look at how knowledge is organised. Are you talking about introducing them to different theories about development or Māori/ European perception of land ownership? Or introducing them to the Peter's version of the world map? If this is the case I'm not sure we do it very well or very consistently.

Participant 12

Participant 30 on the other hand, while making 17 statements over all posted most of these as lower order entries and did not engage in any specific directed dialogue with other members of the discussion community (column six). She tended to focus on reporting findings and explaining ideas in a matter of fact way without commenting of points others had made or posing questions for the community to consider further. Thus she posted just two higher quality statements in the module as whole.

Participant 33 scored relatively modestly in Table 1 because the pressure of travel associated with her role prevented this participant from taking a full part in the module. The entry extract below shows participant 33, when she was able to contribute, did so thoughtfully and enthusiastically.

It is interesting looking at the common threads in the definitions. I find [this] exciting.

[Participant 37] commented about the richness that can be brought to the study of Geography by considering a range of perspectives ... That for me is the delight of the subject. Just as 19thC armchair geographers initially took vicarious pleasure out of the reports of explorers and early ethnographic reports, students in today's classrooms enjoy discovering and trying to understand how people in other places understand their world. I suspect many teachers go some way down the track of doing this in their classrooms. Whilst there are teachers whose approach could probably be labelled positivist, I think there are many teachers who are presenting their students with a mishmash of perspectives, often unwittingly.

[Participant 31] talks about challenging students to think about different ways of knowing. Many senior students enjoy this sort of challenge and it can grow out of encouraging students to explore approaches to problem solving that I have seen defined as futures perspectives. I suspect that teachers would describe it exploring the consequences of creative or lateral or off-the-wall solutions to problems.

What is exciting to me about both is that they require interactive approaches to teaching and learning that allow students to develop their skills, knowledge, ideas and understanding. Sorry, can't stop being a teacher and analysing the processes.

Participant 33

This extract, along with those by participant 12, shows the high level of thought and the ability to react to, and comment on, the ideas of others typical of many of the entries in the module. Unfortunately the potential for a more successful result in the semantic analysis section of this module was undermined by the lack of time participants had to contribute to as described in the earlier structural analysis. This participant (33) would probably have scored in a similar level to participant 12 if she had been able to take a full part in the module.

Module one in review

This section has shown that in the *Coming to Terms with the Geography Perspectives* learning community there were factors that impacted upon the effectiveness of the module. After making a very promising start, the module faltered part way through Exercise 3, in week four. While it limped on at a low level of activity for another four weeks the energy and enthusiasm of weeks one and three was not repeated. The module essentially ceased to function as a learning community after the first three weeks.

The analysis of the level of participation and engagement of the individuals in the module shows that the participants fell well short of the expectations of the online approach of community practice outlined in Chapter 4. Similarly, the analysis of the quality of material posted in the five key exercise and discussion spaces indicates that the level of community of practice dialogue achieved was disappointing. While there were a number of very valuable entries posted, as reported above, only two participants really engaged in the community of practice concept in any depth (participant 12 in the exercise discussions and participant 33 in the open dialogue area).

As a final comment, it is important to note that feedback by participants about this module was in fact very encouraging. Participants spoke very positively about the potential of the approach. However, this potential was not realised in the GP module. Feedback from this initial module pilot was used to identify shortcomings so the second module reported in the next section could address them.

Module two narrative: Coming to terms with the values exploration process (VEP1)

Setting up

The Coming to Terms with the Values Exploration Process (VEP) module of August – September 2003 (henceforth referred to as VEP1), in contrast to the GP module, was an entirely new development. The design of the module was based firmly on the VCoP approach and the module design ideas for implementing it described in Chapter 4. Further, experience with the GP module through three iterations in 2002 and 2003 had led to a well tested module

structure. All that was required was new resources, topic text and exercises to adapt the approach to a new content area.

When this project I was able to draw on wide experience in values exploration in Social Studies including: a key role in developments that lead to the introduction of values exploration to the New Zealand Social Studies curriculum (Hunter & Keown, 2001); in teaching about values exploration in online in 300 and 500 level university papers; and in publications on the subject (Keown 1998a; Keown, 2000). This experience and what was learnt in the Geography perspectives module meant that there were improvements in the design and preparation of the module during July 2003.

The GP round of the approach had raised a number of issues, and in tune with grounded research and action learning and action research principles, adjustments to the module design were made as a result. Most of these changes aimed at reducing the size and scope of the module to make it more manageable. Firstly, the time frame of the module was extended slightly to run over a five week period rather than four. Secondly, the number of discussion entries per exercise was reduced from three to two. Thirdly, the VEP module was organised into six topics rather than the eight used in the original GP module (seven topics plus a pre-module introduction).

The module was developed in mid 2003 in preparation for a start in August of 2003. The overall structure of the module was similar to that used in the GP module and followed the VCoP approach structure. The module began with an introduction very similar to that used in the GP module. However, this was now included as topic one of the module, and with an accompanying exercise that asked participants to reflect on and discuss the community of practice concept.

Topics two, three and four included both sharing of personal experience and exploration of new concepts and teaching approaches from literature. This is consistent with the VCoP approach as outlined in Chapter 4, but uses a different sequence of events than in the GP module. In the GP module teachers shared their prior experience and views in topics two and three *before* they were introduced to literature and new ideas in topic four. In the VEP module these two activities (examining and discussing personal practice and literature) were completed sequentially, *within* topics two, three and four. Topics five and six, as in the GP

module focused on developing, trialling and reflecting on new ideas about values exploration in the classroom.

The VEP module included a similar volume of professional reading material to that in the GP module (49 pages for VEP and 51 pages for GP). The VEP module reading focused more directly on ideas and examples specifically related to the classroom than the GP module. Reading material for topic four of the VEP module, for example, focused entirely on classroom ready materials.

Structural analysis

The letter of introduction to the module and accompanying resources were mailed four days prior to the module start up. The 13 initial enrolments were quickly reduced to 10 when three people withdrew without taking part in any aspect of the module. The relatively short lead-in time caused some delays in getting the module underway, but by half way through the first week six members had entered biographies and a further three did so by the end of the first week.

As in the earlier module, most participants were very positive about the opportunity to take part.

> I am looking forward to being part of this online experience and wait in anticipation for the upcoming discussions.
>
> > Participant 18

Some saw potential for very practical outcomes from the module.

> I have been involved in implementing NCEA Level 1 Social Studies at Year 10 and teach one of three classes currently working at this level. Shortly, I shall be creating the AS 1.4 on values, so this will be an especially valuable course for me.
>
> > Participant 25

Again many were anxious about what they were about to embark upon.

I am rather nervous of this way of communicating but am prepared to get on to the

steep learning curve - I hope it is not a slippery slope!!

<div align="right">Participant 19</div>

Participation in this module was variable. Three participants (16, 22 and 23) contributed only four times or less during the eight weeks that this module ran. One posted just one message in the initial biography section but failed to take any further part. Another posted once in the introduction and each of the first two exercises and then dropped out. A third posted a biography and remained in touch with the module for some time, but posted just one exercise entry (in Exercise 3).

There were seven regular contributors whose posting was at a similar rate to the Geography module participants (between seven and 13).   The "Talk to the Facilitator" space was well used with 25% of the postings occurring here. This confirms the importance of the importance of 'back channel' communication mentioned in VCoP literature (Wenger et al, 2002, p. 58**).** On the other hand, the open dialogue section of the module was used even less than in the GP module (just one entry each from two participants). As in the earlier module, as facilitator, I posted a large number of entries (62).

In the second module the number of posts expected in five compulsory exercises was lower at 11. The three low posting participants discussed above also scored poorly when actual posts and expected posts were compared (9%, 18% and 27% active - where 1 posting of 11 is 9% active and 10 out of 11 is 91% active). Another participant (26) was also a relatively inactive community member at 36% active in the key module exercises.

The average participation rate for the ten people in this module was relatively low at just 54%. However, the seven people who made a serious effort to engage with the module averaged 69% active. Reasons for the low rates of involvement of some members of this module are discussed further in Chapter 6 and Chapter 7. Figure 10 presents the overall pattern of activity in the module, including the facilitator postings, in graph form. This activity includes all module entries posted in the exercise and discussion aspects of the ClassForum site during the nine weeks of the module. There was a very high level of activity in the first week as the module got underway, in spite of the problems associated with the late arrival of start-up materials. Nine of the ten teachers involved were active in week one.

<div align="center">119</div>

There was less activity in week two to five but six regulars maintained a relatively high level of activity during this time, although there was a dip in activity in week four. As in the Geography module there was a sudden collapse of activity in the middle of the graph (week six) followed by a resumption of a lower level of activity in weeks seven to nine. The sudden cessation of activity in week six coincided with the end of the secondary school third term and the original timetabled end of the module. The second peak of activity in week seven to ten indicates that some participants who had fallen behind were able to catch up when given leeway to do so.

Figure 10: Module 2 - Dialogue activity by week and by person
(n = 9 plus facilitator)
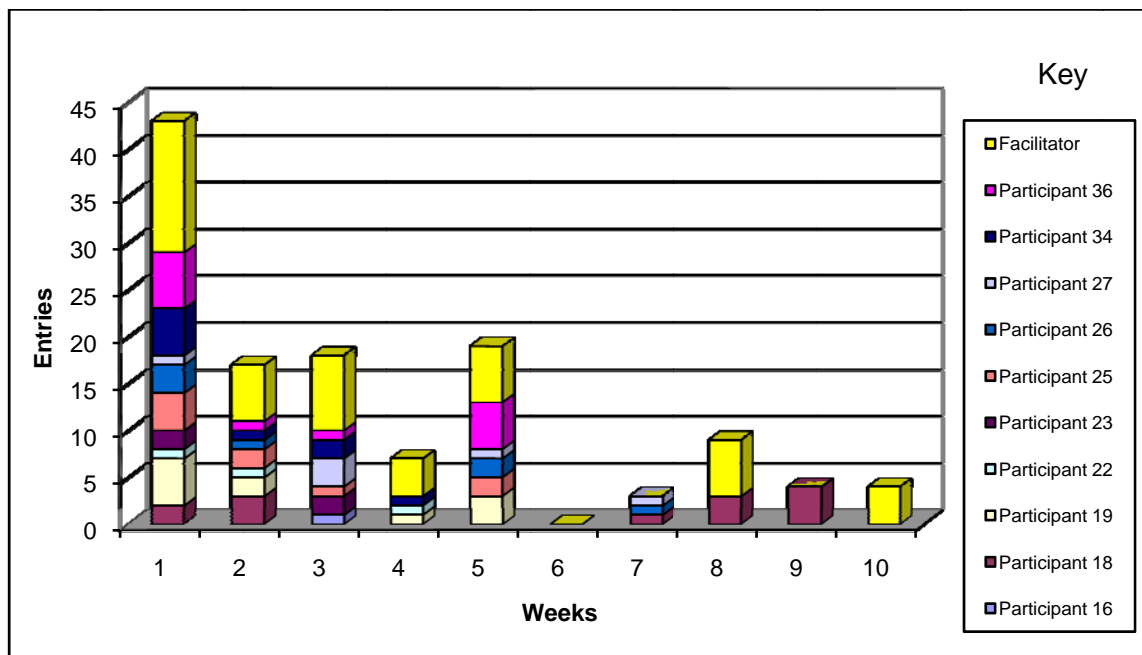
The module was planned as a five to six week experience and the community of practice operated broadly as intended over this time. Figures 10 and 11 enable a closer focus on activity in this five week period. These figures include data from the five exercises only. As these exercises and dialogues lie at the heart of the approach in action it is important to look at them more closely. Figure 11 shows there was a lot of discussion in both Exercise1 and 2 during the first week. The first exercise invited comment on the community of practice

concept. Two themes dominated in Exercise 1. Firstly most participants thought the community of practice concept was valuable, for example:

> I think this idea of an online learning shared community, learning and educating together is brilliant.
>
> Participant 34

However, an even stronger theme was the anxiety some felt. Anxiety about such a new and unfamiliar experience, including worries about handling the technology, finding the time to do the job well, and saying the wrong thing were examples.

> My biggest concerns, regarding this are, time that we will have to spend on it, what happens if we are too busy and fall behind, and how do we find out if what we are doing is correct and what folders do we go in when and how often. I have had no experience in any form of online learning.
>
> Participant 27

I reassured participants that all these issue would be resolved.

> We all seem to be saying the same thing here - we see this idea of an online community of practice as a good idea - but we are worried about being able to make it work. I would say, it is early days yet and I am confident we can make it work!
>
> Facilitator

The second exercise gave participants the opportunity to debate issues about the values dimension in Social Studies. Two options were proved and both created a great deal of interest and discussion though weeks one and two. The discussion entries were very detailed, sophisticated and thoughtful, as evident in quotations included in this section and in Chapter 6. The concerns expressed in Exercise 1 appeared to be largely forgotten. The six entries (by four participants) in the first option averaged 372 words, and the five entries (by three participants) in the second option averaged 391 words. Participants found the discussion and dialogue challenging and rewarding.

Figure 11: Module 2 - Dialogue activity by week and by exercise

(n = 9)
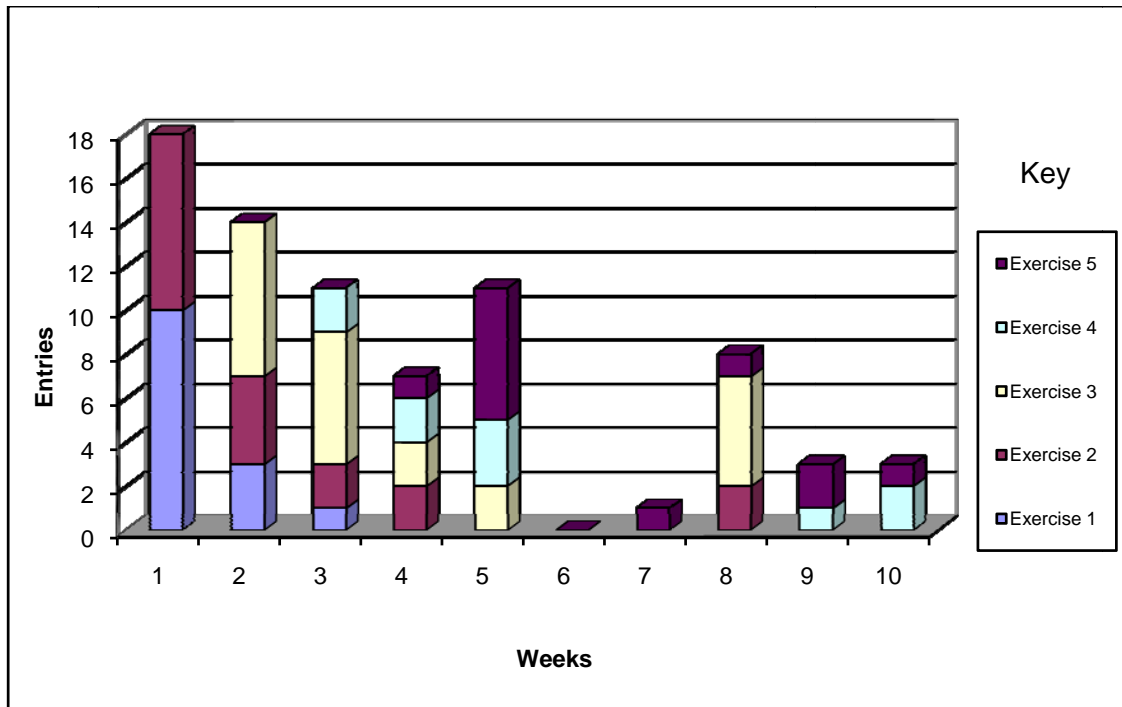
I have dipped into these discussions several times over the past two weeks and have been given plenty of food for thought! … I wanted to add how much I enjoyed being made to THINK about what I am teaching and how I am teaching.

Participant 19

There was considerable interaction, with many questions raised and responses to one another posted. One participant noted in their response to the comments of a colleague.

A quick response to your two questions (thanks for asking, for they made me think).

Participant 25

Some participants took part in such depth that I commented:

In the next exercise don't feel obliged to answer or respond to everyone's ideas. It's best, in terms of the time constraints on us all to respond/comment on just few things.

Facilitator

Figure 11 shows that the high number of postings (now mainly focused on Exercise 3) continued through weeks two and three. Exercise 3 focused on sharing ideas about successful approaches to values exploration in the classroom. Six participants posted eight messages over this period and the facilitator also contributed five postings to the discussion. The entries were again rich and thoughtful (see examples provide in the semantic analysis later in this section), and participant 34 included an attachment of a recently developed activity with one entry. Entries in Exercise 3 continued in weeks four and five.

Exercise 4 asked participants to select one activity they were learning about from their discussion with one another, or from the topic notes and module readings, and suggest how this could be implemented in their classroom. This related to Exercise 5 which asked participants to try out one new approach in the classroom and report back to the community on how it went.

Figure 11 shows that Exercise 4 posting began in week three and continued through weeks four and five. Exercise 5 activity took place mainly in week five. Figure 10 and Figure 11 show there were fewer postings in these two exercises compared with earlier exercises. However, six participants were able to post entries in these two exercises before the end of week five.

Again there was a high rate of posting by those actively involved in the exercise, showing engagement with the module. Participants found the sharing of ideas and approaches in Exercises 3, 4 and 5 very valuable.

It was wonderful reading all your great ideas. I have learnt so much. I just wanted to say thank you very much. I will definitely be using some of your ideas.

Participant 26

What an experience! Values, community of practice, and online - all very rewarding - I have enjoyed reading everyone's comments and have gained new ideas.

Participant 18

The actual posting in comparison with expected postings, and the word counts, showed a number of interesting findings. Nine participants out of 10 took part in all five exercises and

Figure 12: Module 2 - Flow of events planned verses actual
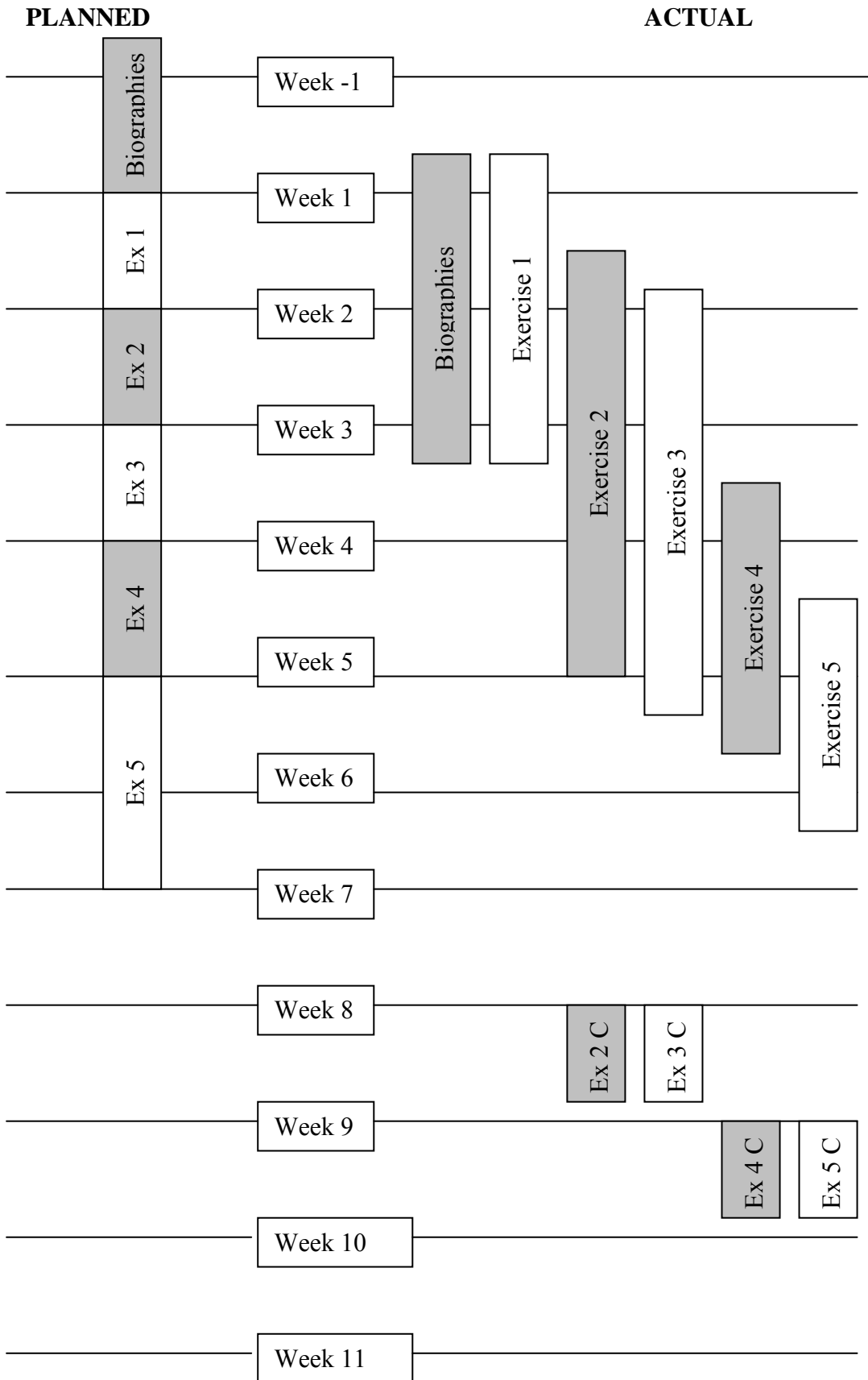
discussions and another participated in four exercises. The number of postings expected in this module was reduced to two per exercise discussion, a total of 10 entries in all (there was also an expectation that all would post one entry in the introduction section). No-one met the ten discussion entry target, and indeed only four individuals managed 70% or more of the expected postings. On the other hand, while there were fewer postings than expected, many of the postings made were substantial and four participants posted more than 2000 words in the discussions and another was very close to this target. A further two participants posted more than 80% of the words expected. Just two participants had very low word counts of 335 (17% of expected) and 318 (16%) and therefore failed to really engage with the module.

Figure 12 shows, in another way, and in a clear contrast to Figure 9, the VEP module ran much more closely to plan than the GP module. The six main dialogue spaces (the biography section and five exercises) ran close to the expected time sequence, in that most participants completed all their work on exercises in weeks one to five roughly in the sequence expected. However the figure also shows that, as in the GP module, participants were not able to complete exercises and dialogues within the timetabled dates set out in the module overview.

Nevertheless, participants in this module were, on the whole, able to complete entries within an elastic time space around the planned timetable. Taking Exercise 2 as an example, Figure 12 shows that while this activity was planned for week two, some started work in week one and others were completing their postings in week four. A similar pattern is evident for each of the other exercises. One participant (18) did not fit in with this pattern and entries in weeks eight and nine reflect this. Work on Exercises 4 and 5 was the closest to the planned timetable, probably because those who were struggling to keep up (apart from participant 18), had ceased trying and those who remained were those who had adapted to and mastered module processes and procedures.

Semantic analysis

Table 2 displays the results of the MDDA and MQR analyses of the module two online texts for the five compulsory exercises. Participants 22 and 23, as expected from their participation and engagement patterns in the structural analysis, scored poorly on the MDDA and MQR analyses, making only six statements each. However, the other seven participants all expressed a reasonably high number of statements (between 20 and 40). As in the

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Geography module, personal opinion and reporting statements were the most common and the number who scored highly in the specific feedback and questioning category was low with just two participants (18 and 36) returning relatively high counts in this area. Participant 36 operated at a very high level throughout the module scoring well in most categories.

The total quality statement column (column 7) shows that participants 18 and 36 stood out as high quality discussants as determined by the MQR rating tool. Five other participants 19, 25, 26, 27 and 34 made a modest number of quality statements, while participant 22 only managed one quality statement and 23 none. This shows a pattern typical of VCoP communities of a small number of very strong members (core) and a larger middle (active) participant group. What is different here is that the peripheral or marginal group at 2 of 9 is much smaller than in a typical VCoP as reported in the literature (Wenger et al., 2002).

Table 2: Module 2 - Dialogue quality frequency of statements and statement types

Participant	Total statements scored	Personal opinion & reporting	Community general responses & queries	Personal interpretive evaluative reflective	Community specific responses & questions	**Total Quality Statements**
18	40	22	1	3	14	**17**
19	24	17	3	1	3	**4**
22	6	5	1	0	0	**0**
23	6	5	0	0	1	**1**
25	27	15	6	3	3	**6**
26	20	13	4	2	1	**3**
27	25	17	0	2	6	**8**
34	30	19	5	4	2	**6**
36	40	15	4	8	13	**21**
Module Totals	**218**	**143**	**24**	**23**	**43**	**66**

As mentioned in the structural analysis discussion above there were many instances of high quality discussion in the module exercise dialogues. As Table 2 shows the quality of the dialogue work of participants 18 and 36 was outstanding. The following extract by participant 36 provides an example.

I'd like to say firstly that I have discovered from the reading that I have done so far on this course that my conscious planned teaching of values to date has been to work through with students a process to study other people's values. I know that we have had discussions and carried out activities about how they feel and what they believe in and might change etc.

They have been satisfying but have not left students with any knowledge of where there thinking came from, what their thinking means or of where to next, in their thinking. This has meant that our values explorations have dealt largely with socialisation i.e. this is how people think/thought about this situation, issue within this culture or at this time and place.

<div align="right">Participant 36</div>

In this part of the entry participant 36 tells us that the reading done in the module is challenging her practice. As a result of reading, and reflecting on her own work in light of the readings, she have realised her work has often been socialisation rather than counter-socialisation (Engle and Ochoa, 1988; Barr et al. 1997). She continues:

We have been asked does the values dimension of Social Studies include both socialisation and counter-socialisation and clarification of these points lead me to say yes of course, it must ,and it should come through teachers and students learning about and using a process of thinking things through - learning how to value. … To learn about values we need to teach a pattern of thinking- provide a pathway through the backgrounds that we all have that might otherwise lead to indoctrination i.e. the socio-economic and socio-cultural backgrounds of people - the strongly held values of parents or significant others - the egocentricity of young adolescents. [In Social Studies] the opportunity to [undertake] counter-socialisation in an informed way will lead to the 'fresh ideas ' society needs. With these skills values teaching in SS can avoid indoctrination.

<div align="right">Participant 36</div>

Again, in a way typical of participants operating at the deeper level of VCoP dialog work participant 36 not only posts her own thinking to the community but also responding to, and in turn, interrogating other individuals while also raising discussion issues for the whole CoP (Chapman et al, 2005).

Hi [P25] I have read with interest your comments on counter-socialisation and indoctrination particularly and they have got me thinking and asking questions- thanks for that.

[But] is the teaching of values leading to counter-socialisation just examining the perspectives of others and changes in thinking over time? I agree that there is a place for

that. [But] to understand the place of counter-socialisation in society and the bringing about of social change but I had hoped we were talking about actively working with students to consider all sides, and through that finding that maybe the entrenched values they have absorbed, or had modeled for them, are not what they now believe, and that they can justify any change in belief because of the processes we go through - values negotiation.

That brings me to another question - I'm like an infant asking why? What is meant by 'good citizen'? … If someone thinks or believes differently to someone else are they a good citizen? Isn't indoctrination the same as presenting certain values because of our age, gender, ethnicity and so on? I wonder if modeling is enough. I know that we talk about 'leading by example' and 'modeling behaviour', but you've got me thinking, and I'm wondering if students really interpret our modeling in the way that we think they would. They might miss the point entirely especially if they live within another culture etc. I think that we should debate and discuss and work through values and teach students skills to do this. Participant 36

By way of contrast, the extract below posted by P23 shows some good quality reporting on classroom activity in response to module activity, but also in a way typical of those scoring poorly in the MQR analysis participants fails to really engaged with the VCoP community. She begins:

I have appreciated the helpful comments from others, and especially Nigel's values graphic.

Participant 23

Although this entry is well into the discussion, this is the only reference participant 23 makes to the work of others. It is a very brief and general comment does not take the discussion community forward. The rest of the entry goes on to explain what participant 23 herself had done in her class, in some detail:

Last week I used the "Death with Dignity" Bill issue in trying for the first time the "controlled" discussion. Each student was invited to support or reject the idea of legalising euthanasia in New Zealand, preferably with their reason [which could be emotive]. We

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then looked at the four comments from MP's who voted [Herald 3/8/03] on the Bill and finally went onto asking each other about their comments.

The whole exercise was quite fascinating, because it gave students the chance to hear the points of view of each other, and an opportunity to look at their own stance again. It was not until towards the end of the discussion that the class asked for my opinion, and I only took the role of ensuring everybody had the chance to speak, and that no personal comments were made to each other. I thought this was a great way to get students to review their values in a non-threatening environment. I am eager to try this in junior classes now.   Participant 23

While this shows commendable action in the classroom it is a straight forward report on what happened. It does not raising any issues for, or pose any questions to, the discussion community.

Module two in review

The data presented in this section suggest that the *Coming to Terms with the Values Exploration Process* module unfolded to plan for five of the ten participants and was moderately successfully (and close to plan) for another two participants. Module activity was sustained at a relatively high level for a full five weeks, and some participants returned to the module to complete catch-up work after the school holiday break.

This was a much more positive result than that achieved by the GP group, and suggests that improvements made following the GP experience such as reducing the number of postings expected and lengthening the timeline of the module made the VCoP approach to TPDL more manageable for participants. This appears to have contributed to greater participant engagement and an improvement in the quality of discussion. This was most evident in a substantial increase in the volume of words posted. This averaged 1672 words per participant in the VEP1 module as compared with the 1055 words per participant in the earlier GP module. There was also a modest increase in the number of scoring dialogue statement at 24.8 per participant as compared with 22.8 in the GP module.

However, the number who exceeded double figures in the important community dialogue category of the quality analysis remained low (two in the VEP1 module and one in the GP module). Further, the fact that three people dropped out of the module relatively early, and two other participants could not complete all topics (or were not able to do so within the planned time frame) suggested there were still further improvements needed.

The experience of the GP and VEP1 modules during 2003 were evaluated and critiqued by participants and myself during the final two months of 2003. The outcomes of this reflection were used in a grounded research and action learning action research manner to make further changes to the way the approach was implemented in the third module, as reported in the next section.

Module three narrative: Coming to terms with the values exploration process (VEP2)

Setting up

The 2004 round of the *Coming to Terms with the Values Exploration Process Module* (VEP2), run in the March to June period, was similar in design and presentation to the 2003 version. The previous two rounds of the approach had shown that modules can operate successfully for the strongest core participants but other participants were still not participating as frequently (as shown in participation rate data) or as thoughtfully (as shown in quality dialogue analysis) as expected. Both previous module experiences raised operational issues relating to module content, structure, and timing. These issues were discussed by reflective focus groups held late in 2003. I also evaluated the results to this point over the summer of 2003 – 2004. As result further changes were made to the VEP module for 2004 in an attempt to further improve the effectiveness of the approach for busy classroom teachers.

Previous iterations had shown that the content and overall structure of the approach and the modules were sound in that at least some individuals were able to complete all aspects in a satisfactory manner. However, a major problem through both previous rounds was timing. The modules in both earlier rounds had been operated in a reasonably flexible way to allow

teachers the opportunity to engage with the flow of reading, exercises and dialogues at times that could be fitted into their busy teaching schedules. However, module experience and focus group reflection suggested that running the approach over a longer time span might help more people to stay with the modules for the full duration. The GP and VEP1 modules had shown that the activities involved in topics four and five in particular were difficult to complete within a short time frame. As a consequence the key change made for the 2004 VEP module (henceforth referred to as VEP2) was a significant extension of the module timetable. While the earlier iterations of the module had worked to a four to six week timetable, teacher focus group discussions suggested one block of six weeks before a term holiday, followed by a second block of six weeks in the next term, might work better. As a result the planned timetable for VEP2 was as outlined Figure 16 (p. 150). It should be noted that throughout this section there is greater detail reported and consequently an increase in the number of graphs and tables. This is because the third module achieved higher rates of engagement and quality of dialogue than the earlier two. More data are reported in this section in order to analyse the differences evident in this module in more detail.

The overall structure of the module used in VEP1 was retained but the time scale was altered considerably. Topics one to four and the associated exercises ran for eight days, a relatively small increase in time compared with the 2003 modules. However, the time allocation for topics five and six were extended considerably. Exercise 4 was expanded to become a three week exercise running parallel to both topic four and topic five. This also spanned the school holiday period, allowing even more time for planning and preparation of trial activities. Topic 6 and Exercise 5 were also given a much expanded time allocation of four weeks. Again the idea in making this change was that teachers would have more time to plan for, and implement a well thought out and relevant new VEP activity that could be easily integrated into the topic programmed for that period of the school year.

There was also some minor fine tuning of topic and exercise content aimed at trimming the module to make it more manageable. However, these were small changes in comparison to the major changes in time allocation. The professional reading materials for the module remained the same as in 2003. Basically the VEP2 module was a repeat of the VEP1 experience with a significant change to the time allowed for topics and exercises.

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However, two new operational ideas were introduced into the 2004 experience. First a dialogue partner or buddy concept was an attempt to facilitate feedback, reflective comments and dialogue within the community. Experience in university online papers had shown that such a strategy could be very effective in stimulating high end dialogue. Feedback from participants in the GP and VEP1 modules had also indicated that rapid feedback and response was seen as a key factor in maintaining enthusiasm for, and involvement in, modules. The dialogue partner or buddy concept involved teaming each participant up with one other person in a different physical location, and requesting that each partner watch for entries from their buddy and try to respond to the message with some feedback and comment as soon as possible, preferably within a day.

A second new element was the establishment of sub-groups because experience in university paper online work, and some literature, suggested that dialogue communities work best when each individual is expected to interact within relatively small groups of somewhere between eight to 20 people (Hall, 1976; Twig, 2001; Moallem, 2003). Literature suggests that very small groups quickly run out of ideas and enthusiasm, while in larger groups many feel left out or lurk on the fringes (Caspi, Gorsky & Chajut, 2003). The number of participants in earlier rounds (five in the GP module and 10 in VEP1) were small and had operated in a single group. However, as enrolments in VEP2 were higher (25 at the outset) it was decided that module discussion should be run in two separate groups in an attempt to make dialogue more effective. In particular it was hoped that two groups of 12 to 13 participants with a buddy system would make feedback quicker and more regular. One group was made up of people located in the more northerly parts of the country, called the "North Group", and the other of people located in more southerly regions, the "South Group".

Structural analysis

The letter of introduction to the module and accompanying resources were prepared in January of 2004 and gave participants four to five days to get familiar with the site prior to starting Exercise 1. The module began with 25 people enrolled. As outlined in Chapter 3, a wide range of different people were recruited into this module. Twenty-three were secondary school classroom teachers of varying degrees of experience, and the other five were secondary school advisors and/or tertiary based teacher educators.

Many of the teachers who were enrolled in this module were working in a Ministry of Education funded special project, the Senior Social Studies Beacon Project. In some ways, this proved to be problematic for this module. Seven enrolees made one to three entries in a module that was open and available for 20 weeks.

Table 3:   Module 3 - Number of posts by participant (n = 25)

Partic-ipant	Introd-uction	Exer-cise 1	Exer-cise 2	Exer-cise 3	Exer-cise 4	Exer-cise 5	Open Discuss-ion	Question & Answer	Talk to Facili-tator	**TOTAL**
1	0	1	2	1	1	2	0	0	0	**7**
2	1	3	3	2	2	4	1	4	2	**22**
3	0	2	1	0	0	0	0	0	0	**3**
4	1	1	1	1	2	2	0	0	0	**8**
5	1	1	0	0	0	0	0	0	0	**2**
6	1	1	2	1	2	1	0	0	0	**8**
7	1	0	0	0	0	0	0	0	0	**1**
8	1	1	1	1	1	1	0	0	0	**6**
9	1	0	0	0	0	0	0	0	0	**1**
10	0	2	2	1	1	2	0	0	0	**8**
11	2	1	0	0	0	0	0	0	0	**3**
13	0	1	1	0	0	0	0	0	0	**2**
14	1	1	2	2	1	1	0	0	0	**8**
15	0	2	3	1	1	0	0	0	0	**7**
17	1	2	2	3	2	3	0	0	0	**13**
20	1	2	1	1	0	0	0	0	0	**5**
21	1	1	1	2	1	1	0	0	0	**7**
23	0	0	0	0	1	0	0	0	0	**1**
24	1	2	1	2	2	2	0	0	0	**10**
28	1	2	2	2	1	2	1	1	1	**13**
29	1	3	4	3	3	2	0	0	2	**18**
32	1	2	2	1	3	0	2	2	4	**17**
33	1	2	4	0	0	0	2	0	1	**10**
35	1	2	2	1	1	0	0	1	0	**8**
37	1	2	2	1	1	1	0	0	0	**8**
Facilit-ator	4	16	13	3	11	6	4	3	16	**76**
	24	**53**	**53**	**29**	**37**	**31**	**10**	**11**	**24**	**273**

Six of these people (participants 3,5,9,11,13 and 23) were members of the Beacon Project and three were from the same Beacon school. Issues related to the Beacon Project contributed to the early withdrawal of five of these people (refer p. 135-136).

The module got underway on time. Most participants had their mail out materials in the week prior to the official start of the module (the only exception being two or three late enrolments). However, only three participants made a prompt beginning by entering their biographies prior to the module start up day. A further 10 participants entered their biographies in the first week of the module. Five people did not post their biographies until week two and another not until week three. Six people did not enter biographies at all, although three of these (1, 10 and 15) did become regular participants in the module. The pattern of ragged starts, evident in the first two modules had continued.

As in the earlier modules, most participants were very positive about the opportunity to take part in the module. The wider variety of people (in comparison with earlier rounds) meant the range of reasons why people felt positive about the module was also broader. Standard reasons such as looking forward to learning more about the values exploration process and gaining new ideas about how to teach it in the classroom were frequently mentioned. However other interesting motives were mentioned such as: the opportunity to be "listening, reading and sharing this year with everyone" (5); "reactivating my grey matter" (2); interest in "the process of online learning" (28) were also mentioned.

The pattern of online activity in the module is outlined in Table 3. The greater numbers involved in this module mean the data are more complex, and shown in full to highlight each individual's record in the module. Again as in earlier modules participation was quite variable. The relative non-participation of the seven participants mentioned above is evident. Two people (7, 9) posted only one entry, their biographies, and then took no further part. Two others (5, 11) posted one message in the first exercise but then did not participate any further. Two more (3, 13) posted messages in both Exercise 1 and 2 and then dropped out.

Four of the six who made an early exit from the module were from Beacon Project schools, and three from the same school. Data gathered in the online record, focus groups and questionnaires indicated that the school department of three individuals who withdrew as a group was under a great deal of pressure for reasons unrelated to the module. The school department subsequently withdrew from the Beacon Project and the module. The fourth individual (11) is discussed in detail in Chapter 6.

Another who took very little part in the module (23), had enrolled in VEP1 in and wanted to complete the second half of the module in VEP2 having dropped out of the earlier module after Exercise 3. This participant posted one entry in Exercise 4, but then was once again unable to complete the module, and did not post any further entries.

In marked contrast to the seven just discussed, three participants (2, 29 and 32) were very regular and strong contributors posting 22, 18 and 17 messages respectively. A further eleven participants (1, 4, 6, 8, 10, 14, 15, 21, 24, 33, 35 and 27) posted between 6 and 13 messages in the exercise spaces of the module, a similar participation rate to that achieved in the GP and VEP1 modules.

Table 4: Module 3 - Actual verses expected exercise postings
(Note: for regular participants only, n = 22*)

Participant	Actual Posts	Expected Posts	% Active
1	7	11	64
2	15	11	136
3	3	11	27
4	8	11	73
5	2	11	18
6	8	11	73
8	6	11	64
10	8	11	73
11	3	11	27
13	2	11	18
14	8	11	73
15	7	11	73
17	13	11	118
20	5	11	45
21	7	11	64
24	10	11	91
28	10	11	91
29	16	11	145
32	9	11	82
33	7	11	64
35	7	11	64
37	8	11	73

[* Participant 23 only took part under special arrangements and is not included]

The retention rate of the 18 people who made a firm commitment to the module was very high. Only one (20) can be regarded as a drop out after posting in Exercises 1-3 but failing to continue with Exercises 4 and 5.

Two other aspects are worthy of comment. Firstly, as in the earlier modules the number of messages posted by the facilitator was high, (76 facilitator entries and 273 participant entries) this represents a sizable drop in facilitator dominance. The facilitator's entries as a percentage of total entries for this module is 28% a considerable drop from 52% and 44% in the earlier two modules. It is acknowledged that the 28% figure is strongly influenced by increased number of students in the module, although this fact may have also assisted greater dialogue by participants in this module. Secondly, it is interesting to note that four of the five participants who were most active in the module (2, 28, 29 and 32) were people who made good use of the open dialogue, question and answer, and talk-to-the-facilitator spaces, as well as taking a full part in the compulsory exercise discussions.

Table 4 presents the actual versus expected posting record for each participant in the exercise section of the module. Again, as in other modules, there is considerable variation. Interestingly in this round of the approach the most committed participated at a much higher rate than in the two earlier modules. Three participants (2, 17 and 29) posted well above expectations. Participant 29's percent active rating was very high at 145%. The average participation rate in this module was 81%, a marked increase on the earlier two module's rates of 61% and 64%.

Figure 13 presents the overall pattern of dialogue activity in the module. This figure includes all module biography and exercise entries by all participants, and by the facilitator, over the full 20 weeks the module operated. The figure shows that there was a steady level of activity throughout the first five weeks. In a way not seen in the other modules, the level of activity rose steadily through the first four weeks, indicating perhaps, that as participants settled into the dialogue community and became more comfortable with it, the level of traffic in the module increased. As was evident in the other two modules, the end of a school term resulted in a steep decline in module activity in weeks five and six. Week six was the final week of the term.

Module documentation suggested that teachers use the school holidays (weeks seven and eight) to catch up, and indeed some did this (see Figure 13). Weeks seven to 11 saw a steady flow of seven to nine postings week. After a second quiet period in weeks 12 and 13 a second

peak of module activity occurred in weeks 14 and 15. This was made up largely of Exercise 5 entries, as participants began to report in and discuss one another's classroom trial activities. Weeks 16 and 20 averaged around five messages a week as some who had fallen behind earlier completed their final few entries.

The VEP2 module was planned as a 12 week experience: two six week blocks separated by a two week catching up period in the middle, 14 weeks in all. Figure 16 (page 150) shows that as in the two earlier modules, that while the majority of those who commit to the modules were able to stick relatively closely to the planned timetable, a small number needed the flexibility to be able to catch up when they got behind. Thus the module which should have been completed in 14 weeks did not finally wind up until the end of the 20th week.

Figure 13: Module 3 - Dialogue activity by week (n = 23)
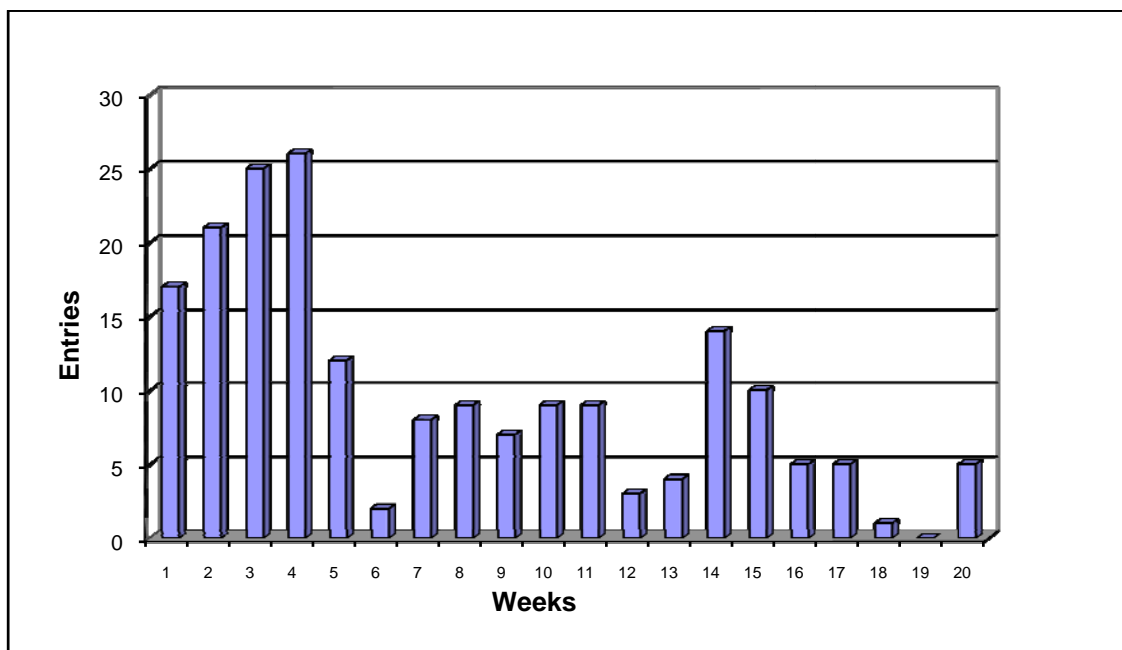
An examination of the overall pattern of participation in the five key module exercise and dialogue spaces in Figure 14 shows a familiar pattern of a higher number of entries in early exercises. Exercise 1 and 2 both saw more than 35 messages posted. As some participants dropped out of the module the number postings declined to 26 in Exercise 3, and to 24 in Exercises 4 and 5. Figures 15 and 16 focus on dialogue activity in two contrasting ways. Figure 14 graphs weekly postings by exercise over the first six weeks of the module and Figure 15 presents similar data for weeks seven to 20. Figure 14 shows a relatively high level

of exercise posting (20 plus per week) in three of the first four weeks of the module. Week one was busy week with 26 messages posted in Exercises 1 and 2. As discussed earlier, a number of participants were slow in getting underway in the module and Exercise 1 postings also dominated in a slower second week (16 posts).

Exercise 1 was the first occasion in which the subgroup and dialogue partner concepts were used. Participants were asked in the first phase of the exercise discussion to post their own experience of, and thoughts and ideas about, the community of practice. They were also asked to raise any questions or issues they had with the concept. They did this as individuals. In the second phase they were asked to comment on, and extend thinking, from their dialogue partner's entry.

Figure 14: Participant dialogue activity by week and by exercise.
Weeks 1 – 6 (n = 23)
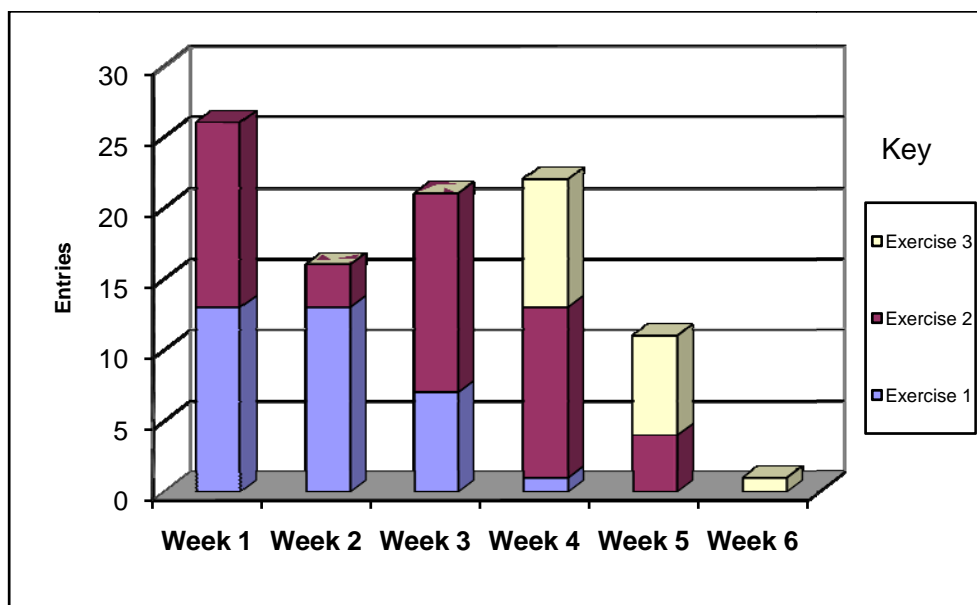
The North group was slow to get underway. While the exercise asked for in initial entry early in the week and a reflective entry to a dialogue partner later in the week, by halfway through the week only two of the 14 people in the group had made an entry. By the end of the week only four had posted in entry and no one had responded to a dialogue partner.

On the other hand the four initial participants in the discussion quickly began a thoughtful and interesting dialogue about the role of key thought leaders in community of practice groups, and the relative balance between information from experts and a sharing of insightful

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everyday experience by rank and file members of the community. There was targeted discussion across the group, but none of this was directed to named dialogue partners. The facilitator felt it necessary to intervene as follows.

The idea of responding to and discussing with one another is starting to take off here - which is good. The dialogue partner idea doesn't seem to have 'kicked in' yet. It may take a while for everyone to get into the way of this, so if any of you want to respond, but you have no dialogue partner to respond to yet, just go ahead and respond to anyone else. I can count that as your second response in the meantime. On the other hand keep an eye out in case your 'partner' does come in and be ready to make a brief response if and when that happens.

<div align="right">Facilitator</div>

A further five individuals posted entries in the following week. The discussion picked up on the earlier key issue of expert and ordinary participants, and then moved on to discuss the perceived reluctance of secondary school pupils to see themselves as a community of knowers, and their perceived desire to remain within an expert-apprentice framework for classroom discussion and learning. Again there was some quality discussion across the group but no use of the dialogue partner concept. Unfortunately five members of the North group did not enter the discussion at all. Exercise 1 discussion for this group, 21 messages in all, finished at the end of the third week.

Thus the initial exercise discussion for the North group saw some very interesting discussion entries by five strong members of the group (who made at least two entries) and four others who made one entry. A good number of the entries (as shown in Table 4 later) were reflective dialogue, and at the high end of discussion quality ratings. However, the dialogue partner strategy, partly because five potential partners did not post messages, failed to work at all with this group in this exercise.

Entries by the South Group in Exercise 1 were concentrated into two distinct phases. An initial 21 messages were posted over the first two weeks by 10 of the 14 members of the group. However, three participants entered this discussion late, well after the others had moved on to Exercise 2. A further 13 messages were posted by these three late entrants and the facilitator in weeks four to13.

Many of the individuals in this discussion group talked about ways in which they had participated in groups that they considered operated in community of practice (CoP) fashion. Some felt that a really good school department could operate as a CoP. Other suggestions included: special task teams such as the Social Studies exemplar project or NCEA training groups; exam marking panels; and even some well trained classes of pupils. While many had taken part in something that resembled a good community of practice, all mentioned that the online dimension of this CoP was new to them. This group also discussed the nature of quality professional development, emphasizing that it needed to be ongoing, and that there needed to be specific time set aside for TPDL.

Four people in the South group made an attempt to use the dialogue partner approach. Two of these, participants 33 and 37, did make reflective responses to one another. Two other members of South group made targeted and reflective responses to their dialogue partner but this was not reciprocated.

Both later and earlier arrivals continued work in Exercises 1 and 2, in week three, as postings returned above 20 for the week (see Figure 14). Exercise 2 was based around discussion of three roles for values in Social Studies, and issues of socialisation, counter socialisation, and indoctrination. Three members of the North group (17, 28 and 32) moved quickly into high level debate and dialogue about the desirability or otherwise of teaching liberal democratic values through Social Studies. These three participants made extensive use of the module readings, and interpreted and applied them in a sophisticated way, as the following two extracts show.

Learning how to value, and values inquiry, are more important than encouraging the development of liberal democratic ideas. If we go back to the discussion about definitions of values at the beginning of the reading, it is argued that many writers identify three different kinds of values - aesthetic, process, and moral or substantive values. If that is correct, then holding and supporting a set of liberal democratic values could set up a moral conundrum for some of our students. We see it with some of our Tongan students who support the notion of Kingship, and the values implicit in such a political system in the face of a set of mainstream liberal democratic political values. If some students attempt to adopt or even to discuss liberal democratic values, they are set on a path of moral value conflict with their parents because the parents perceive that their child's teacher is trying to convince their children that their King is in the wrong by continuing to rule in the way that

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he does. Hill's argument that "the potential for indoctrination must be minimised by developing the skills of social inquiry, ethical analysis and trans-cultural critique" provides a way forward to accommodate learning to value and values inquiry. But the third role of supporting liberal democratic values is far more vexatious when we are trying to teach values. What values is Don Brash supporting about race relations and the place of Māori within New Zealand society with his Orewa speech? Is it inclusiveness or is it racism?

Participant 28

They also reacted to, and commented on, one another's ideas in the manner hoped for in the VCoP approach.

My thoughts about the relative importance of the three roles of values in SS – well my first reaction to the reading was similar to 28 and 17's - that the first two roles (values as a process, and values inquiry) are more important than the role to promote liberal democratic values. But then I changed my mind, and for the next 5 minutes at least see them as more equally important, and important to include in balance with each other.

I got to thinking about 28's example of Tongan students facing conflicts between the values underlying Kingship, and the values underlying a liberal democratic political system. Doesn't this conflict provide an ideal opportunity for the kind of critical thinking Engle and Ochoa talk about? The concept of an 'absolute value' (Haydon, section G.) versus values that are promoted because they are necessary for living in a liberal democratic society seemed helpful to me. Maybe the wording of the 3rd value ('to encourage the development of liberal democratic values') makes it sound a little too close to the promotion of 'absolute values'. If liberal democratic values do though include (as stated in the position paper) social justice, the welfare of others, acceptance of cultural diversity and respect for the environment, then isn't it important and legitimate to accept, inquire into and critique the values of a Kingship system, and the relevance of such a system to Tongan students?

Participant 32

These responses were so detailed, and at such a high level of intellectual discourse, that, as facilitator I felt it necessary to create a climate of acceptance for a range contributions.

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Thanks 17, 28 and 32 for your very interesting and thoughtful contributions. You have raised a number of points I am sure others are going to want to discuss further. The three of you have set a very high level of thought and discussion here! You have all written beyond the suggested 150 - 300 word guideline. This is great to see - but - I want to say to those who have not come into this discussion yet, that any contribution to the community is seen as valuable. Some of you may want to put in much shorter entries. An entry that perhaps just addresses one of the items raised by this exercise/topic is fine.

<div align="right">Facilitator</div>

A less experienced member of the group immediately responded with relief and then posted a more modest contribution.

I am so glad to read that! I must admit that I was very impressed but a little overwhelmed by the depth of thought and knowledge put forward by 17, 28 and 32!

<div align="right">Participant 29</div>

The dialogue continued at a high level of thought through the first eight days of the exercise discussion. Following the facilitator's message legitimizing briefer and less sophisticated entries, four further members of the group entered the discussion. Much of the discussion in this exercise conformed to the community of practice ideal. It showed people prepared to put their ideas forward, to listen to the ideas of a range of others, to consider these with an open mind, and on occasions to decide that they needed to change their position and their thinking on the basis of the merits of arguments articulated in the online dialogue:

Thanks Paul for your feedback on the LDVP, I was viewing it only as 'our' way of thinking and viewing the world, but your "definition" does make a lot of sense to me. I think that I would now change my position in view of this new perspective and agree with you and the others. But I wonder do we have enough experience of the world and all the values that make it up to be able to teach it without our own values shadowing them? But in retrospect as others have said before, it is more about teaching the skills to analyse etc than the actual values.

<div align="right">Participant 29</div>

Unfortunately, only seven of the 14 people originally assigned to this group actually took part in this discussion. North group discussion in Exercise 2 came to a close after 15

messages had been posted (one exception, participant 24, made a late reflective posting in early June). Again, as in Exercise 1, no-one in the North group made any attempt to dialogue directly with their designated dialogue partner. However, this was entirely understandable as of the seven dialogue pairings in the group, only one was intact. Five participants' partners had disappeared from the module, and for one pairing neither partner was still engaged in the module. The high dropout rate in this group was, at least in part, associated with the Beacon School issue discussed earlier, and issues discussed in Chapter 6 (participant 11, case study).

The South group on the other hand had 13 of its 14 members still in the module. However, two of the 13 were dormant during the time period in which most members discussed the issues involved in Exercise 2. As a result only four of seven dialogue pairs had both partners active in the Exercise 2 discussion in weeks three and four when most of the dialogue took place. Three of these four pairs did take an active part in partner dialogue showing that a majority of those who could do so had picked up on and begun to use this strategy.

There were strong statements by a number of participants reflecting an acknowledgement of the value of professional reading, and indeed expressing enjoyment of the challenge these provided.

Boy what thought provoking material this week! (A response in less than 300 words impossible!)

<div align="right">Participant 2</div>

I am in agreement with most of the other people who have gone before me - that the readings were challenging but certainly made me think more critically about what I am teaching. I realise that it is not only when I embark on the process of values exploration that I am teaching values but that it is implicitly threaded into teaching anything we cover in Social Studies. After all Social Studies is about people and people all hold values or attitudes consciously or subconsciously.

<div align="right">Participant 37</div>

On the other hand, some found the readings quite difficult for various reasons, but nevertheless moved beyond the barriers to take an active part in discussion.

I found this resource material difficult to deal with at 3.30pm after five Social Studies classes in a row! When I revisited it during the weekend in a quiet room I immediately found it stimulating and challenging and I would like to discuss it further.

Participant 1

As a non-academic, the readings are pretty heavy, but I have managed to interpret some points for discussion.

Participant 8

Again, South group started this exercise with very sophisticated entries from four contributors in the first two days of the discussion. Again the facilitator was concerned to communicate to the group that while such rich postings were gratifying, that shorter entries were also welcome and valuable. Eleven of the 14 people assigned to this group took a very active part in this discussion during weeks three, four and five. The dialogue was again very thoughtful and sophisticated and highly interactive. This group, as in the case of North group, showed that secondary school teachers, in an online environment, could engage in high quality community of practice dialogue as envisaged in the approach design. The South group dialogue engaged teachers at all levels of experience and sophistication. One of the key factors in this was the presence of six members of a strong and united school department in the group. This important dimension of the VEP2 module is discussed further in the next chapter (School A case study).

This group also discussed and debated in a very sophisticated way as indicated in the quotations above. In particular their discussion of the relative merits of a values clarification and open-ended values dialogue approach, as compared to approaches that encourage commitment to the values of social justice and social decision making in the common good, was extended and represented a high level of critical thinking.

Those who were further ahead in the module began their entries in Exercise 3 in week four, while others continued in Exercise 2, the total posting for week four being 22. The Exercise 3 discussions began with all the participants in the module operating in one larger group, rather than in separate North and South groups. Initially this was a mistake by me as I had forgotten to set up two separate groups in ClassForum. However, as half of those originally assigned to North Group were not active in the module, I subsequently decided to continue with the recombination into one large group.

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Exercise 3 asked participants to identify and outline successful classroom VEP activities. This was a challenge for some. Many felt VEP is often addressed in an informal or naturally occurring way, rather than directly and specifically in planned activities. However, as the discussion developed, a number of popular VEP approaches emerged. Various forms of values continuums, values ranking and values justifying exercises were commonly mentioned. In others shoes and role playing, role adoption activities were also frequently noted. Many suggested that VEP activities often emerged from, or were associated with, current issue studies. A very wide range of interesting and detailed ideas were shared through the discussion. Those who posted later in the exercise moved the discussion beyond the common activities to talk about some more unusual approaches. Many later entries expressed satisfaction and gratitude at being able to read about and discuss such a rich, detailed and helpful set of collegial suggestions.

> Thanks for all the wonderful ideas put forward. I will take a note and use them in the future.
>
> Participant 6

The quality of suggestions and ideas from many participants were outstanding. However, some of the less experienced, found it difficult to come up with ideas.

> Thinking of one activity that really stands out is hard but I find a good introduction and a way to illustrate differing views is a physical timeline with students placed along the line. This works well as it moves them around and is easily understandable.
>
> Participant 10

Exercise 3 entries included many excellent examples which showed the way teachers were thinking at depth about module readings, colleague dialogue and their own practice. There were a number of dialogue entries where participants spoke about the ways in which their thinking was changing. The CoP concept was working precisely as envisaged in the approach, at least for a good number of the participants.

Exercise 3 was also a good example of CoP dialogue progression. In a first round of exercise posting, participants provided examples of VEP activities they had used or heard about. These were largely a straight forward report of what they had done, or heard about. In

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a second round of the discussion, entries became much more reflective and interactive, as reported above. Participants appear to have learned how to dialogue in an online environment, and to been drawn into the practical and helpful nature of the dialogue. The quality of discussion reported above illustrates the high quality of dialogue in this module which is further discussed in the semantic analysis later in this section.

Teachers face end of term pressures and these were evident in the marked decline in exercise and dialogue activity in weeks five and six. Figure 15 shows that five of the keenest participants started work on Exercise 4 during the school holiday break, while three others caught up on Exercises 1, 2 and 3. The group worked steadily on Exercise 4 during weeks nine, 10 and 11, with four or five participants posting between five to nine messages per week, mostly in Exercise 4.

Topic four moved on from teachers thinking about how they and other teachers currently used (or do not use) the VE Process, to look at new and emerging approaches. Participants received 14 pages of reading material outlining 15 varied and cutting edge ideas on ways to approach VEP in the classroom. These readings included some older, but currently under utilized strategies from 1970s writers such as Frankel (1997) and a range of interesting new approaches such as: ethics-based moral reasoning (Kidder, 1996); public conversations (Becker et al., 1995); student action research (Hart, 1997) and narrative analysis (Keown, 1998a). Participants were then invited to select one idea new to them from the readings, or from online dialogue, or from some other source, and outline how they would use it to develop student VEP thinking.

The response to this activity was again of a very high quality. Seventeen out of the 19 participants whom remained in the module beyond Exercise 2 posted ideas into this discussion. The quality of the strategies suggested along with the feedback and comments shared across the group was very high:

Hi 2, your experiential learning activity looks really thoroughly thought out to me. The only refinement I thought of was that you could maybe be careful about using the term 'game' in relation to the terrorism context....maybe stick to activity or simulation? Look forward to hearing how it goes....

Participant 32

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Weeks 7 to 20.   (n = 23)
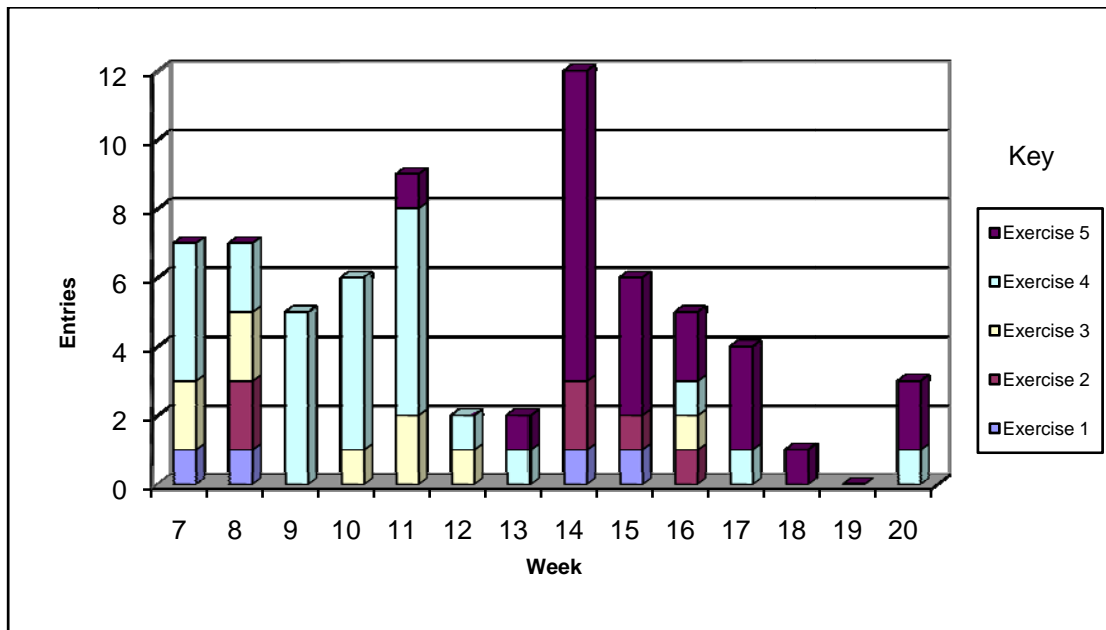
Thanks for the astute suggestion 32 (I have duly changed the word 'game' to 'activity')

Participant 2

Figure 15 shows week 14 was a busy week when six participants posted 10 entries in Exercise 5. Four further entries in Exercise 5 were posted in week 15. Exercise 5 asked participants to report in on the activity they had trialled in practice and to talk about how successful the experiment had been. Thirteen out of the 19 people in the module beyond Exercise 2 did this, a very high level given that participants had by this time been working in the module for a considerable length of time. Of the 17 people active in Exercise 4, 10 completed their planned activity, reported on it, and in seven cases entered into some further discussion about the outcomes with community colleagues. Three participants for various reasons could not carry out their planned activity from Exercise 4, but did run an alternative activity and reported on it. Four people who outlined planned activities in Exercise 4 did not post in Exercise 5. The standard of entries was again judged to be very high. The detail of the reports and the quality of reflection on what had happened, and how activities could be

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Table 5: Module 3 - Participation and engagement (n = 23)

Participant	Exercises "done"	% Expected	Posts	Posts % Expected	Words posted	Words % Expected
1	5	100	7	70	1320	66
2	5	100	14	140	3468	173
3	2	40	3	30	918	46
4	5	100	7	70	1552	78
5	1	20	1	10	257	13
6	5	100	7	70	1266	63
8	5	100	6	60	785	39
10	5	100	8	80	1428	71
11	1	20	1	10	128	6
13	2	40	2	20	308	15
14	5	100	8	80	1762	88
15	4	80	7	70	816	41
17	5	100	12	120	3344	167
20	3	60	4	40	791	40
21	5	100	6	60	1067	53
23	1	20	1	10	215	11
24	5	100	9	90	2588	129
28	5	100	9	90	2995	150
29	5	100	15	150	2210	111
32	4	80	8	80	2035	102
33	2	40	6	60	1920	96
35	4	80	6	60	1840	92
37	5	100	7	70	1624	81
Ave	**3.9**	**77**	**6.7**	**67**	**1506**	**75**

modified for the future was good as the following entry illustrates:

> Chat Show / Public Dialogue … Overall I would say that this exercise went well. Students participated and had fun, gained a more detailed understanding of the content and of values positions. …

> Positive points: - The division of the class into groups who researched and prepared a perspective was excellent. They got very involved in this stage, and came to an in-depth understanding of this values position. They appreciated the chance to interact and partake in class in a different way. Students did take on the idea of dialogue rather than debate, and this enabled them to give and receive a wider range of ideas. The student participation in this format led to a class that is more inclined to discussion in general activities …

> … Points to change: - The format chosen (a talk show), while good in generating enthusiasm for the activity, proved a bit of a distraction. Some were concerned with the

format of a talk show, rather than the content. Also this format was not really the best for seeking a resolution. Next time I would do the same general idea, but instead of a talk show have a UN moderated negotiation session, where the goal was to come out with a plan for peace and progress. While students got a very good understanding of a particular values position, and an overview of the others, they did not get the detail of the others that I had hoped for. …

… Next time, in the UN sessions, I would start with the same group research. After that, every person from that group would then go to a separate UN session, meaning that every person was either a negotiator for a values position, or a UN representative, so that all were involved. This would also allow a comparison of peace plans, to look for common values, and so on.   Participant 17

One participant caught up on Exercises 2, 3 and 4 in week 16, and two others made Exercise 5 entries. Further catching up and finishing off of work in Exercise 4 and Exercise 5 by five of the slower participants saw the module wind down to a close during weeks 17, 18 and 20.   Table 5 shows 13 of the 23 people involved in this module (56%) participated in all five exercise discussions. A further three (13%) participated in the first four exercises. These figures represent a slight improvement in completion rates in comparison to the earlier modules. However, the average posting rate in this module at 67% is considerably higher than either of the earlier modules. Some individuals (2, 5 and 29) posted well above expectations, and a further ten participants posted 70% or more of the 10 entries expected. This relatively good result was achieved despite the relatively early withdrawal of six participants. In addition, the word counts for this module were also relatively high. Six participants (2, 17, 24, 28, 29 and 32) exceeded the 2000 word expectation and six others (4, 10, 14, 33, 35 and 37) posted more than 70% of the words expected. Figure 16 shows that the VEP module of March – June 2004 ran more or less to plan, excepting that, in a similar way to the 2003 trials, the timeline became somewhat longer than expected. It should be noted, however, that 13 of the 18 participants who were regulars in the module had completed their work in the module by the end of week 16. Just five took a further four weeks to finish.

Figure 16: Module 3 - Flow of events planned verses actual

PLANNED   ACTUAL

PLANNED		Week	ACTUAL	
Bios		Week -1		
	Ex 1	Week 1	Biographies	Exercise 1
		Week 2		
	Ex 2	Week 3		Exercise 2
		Week 4		
	Ex 3	Week 5		Exercise 3
		Week 6		
Term Holiday	Ex 4	Week 7		Term Holiday
		Week 8		
		Week 9		
		Week 10	Exercise 4	
	Ex 5	Week 11		
		Week 12		
		Week 13		
		Week 14		
		Week 15		Exercise 5
		Week 16		
		Week 17		
		Week 18		
Term Holiday		Week 19		
		Week 20		

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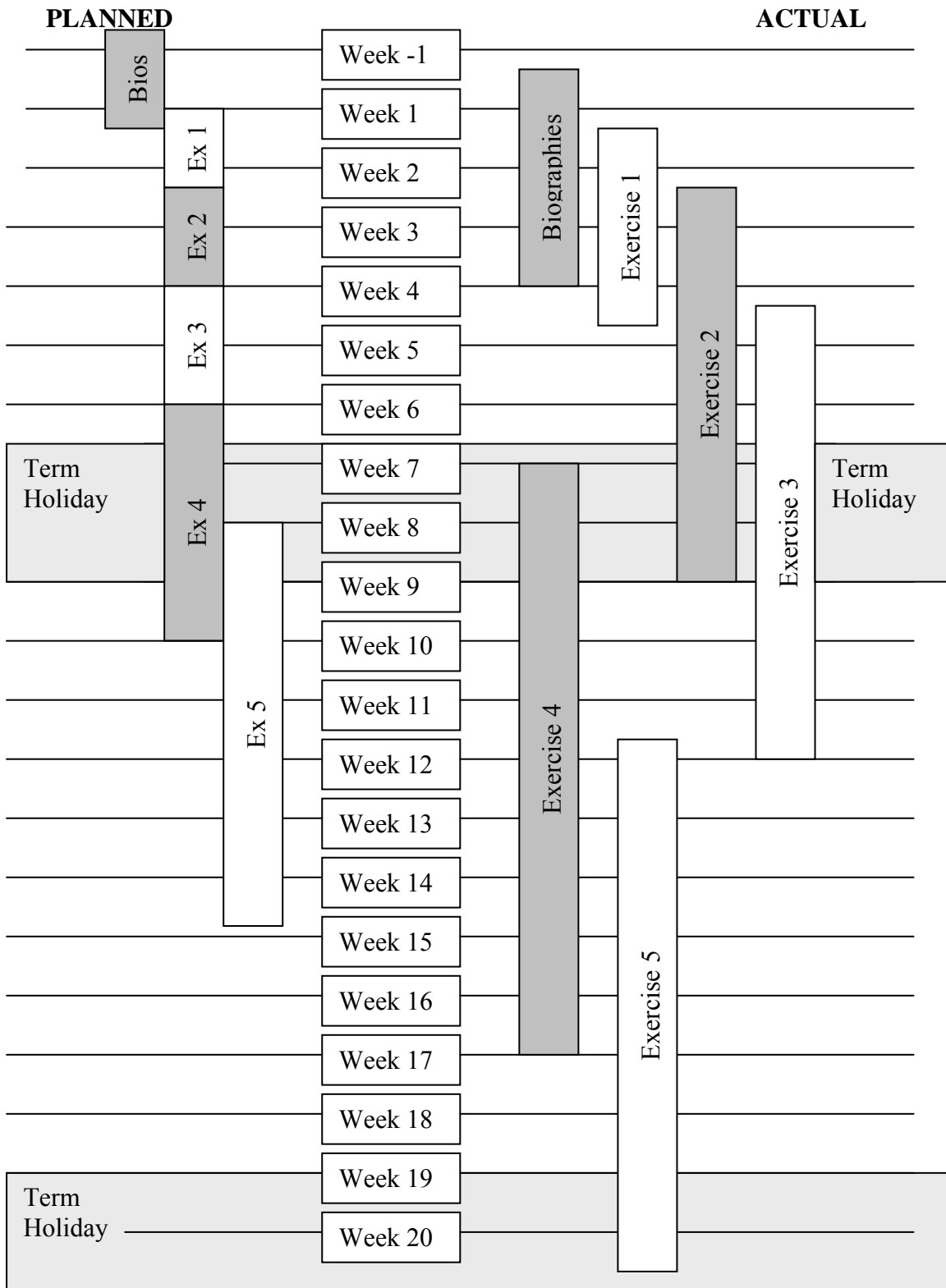
Semantic analysis

As explained earlier semantic analysis provides a greater insight into the quality of the dialogue and interaction in a module. That is, there is greater attention placed on the higher thinking processes of interpretation, evaluation and reflection, and on the higher level dialogue process of questioning and responding to others in the community (Chapman et al. 2005). There appeared to be an improved level of quality dialogue in the VEP2 community as indicated in the data presented in Table 6. The total number of statements scored under the eight quality statement coding criteria of the MDDA and MQA analyses (see p. 79 and Appendix 1, p. 307), was high. One very prolific participant (2) made 60 statements that scored on the MDDA/MQA criteria. Further, nine other participants made 30 or more scoring statements within the five exercise dialogues.

The average number of statements per person in this module was 44 as compared with 22.8 and 24.2 in the earlier modules. The number of higher order interpretive, evaluative and reflective statements was also well up on previous modules. Again participant 21 was outstanding and three others (14, 17 and 24) scored double figures. A further ten participants posted between five and nine quality interpretive, evaluative and reflective statements. The average of 5.7 statements per person in this category was well above the figures of 1.2 and 2.6 in the earlier modules. Similarly, the average number of specific dialogue community responses and questions per person at 6.8 was well above the average of 4.8 in each of the earlier modules. A group of seven participants 2, 17, 24, 28, 29, 32, and 33 excelled, all recording double figures on this criteria. A further six participants posted between 5 and 9 quality feedback and questioning statements.

The final column of Table 6 shows that this module appears to have resulted in a different pattern of participation and achievement when compared with the earlier two modules. Nine of 23 participants made more than 20 quality discussion statements. This means about 40% of the group could be regarded as operating at the core member level, a much higher proportion than in earlier modules. Five individuals entered between 10 and 20 quality statements and a further six between 5 and 9. The solid participant group made up 47% of the community and achieved at a higher level than in the previous groups. The range of quality statements in this module was 1-37 (compared with 2-11 in GP and 1-21 in VEP1). Just four

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Table 6: Module 3 - Dialogue quality
(n=23)

Participant	Total Statements Scored	Personal Opinion & Reporting	Community General Responses & queries	Personal Interpretive Evaluative Reflective	Community Specific Responses & questions	**Total Quality Statements (Total for columns 5&6)**
1	22	13	2	3	4	**7**
2	60	16	7	21	16	**37**
3	15	5	3	6	1	**4**
4	30	15	3	5	7	**10**
5	4	2	1	1	0	**1**
6	21	11	3	3	4	**7**
8	17	7	5	1	4	**5**
10	23	11	5	2	5	**7**
11	3	2	0	0	1	**1**
13	8	1	1	2	4	**6**
14	32	12	2	10	8	**18**
15	18	6	2	5	5	**10**
17	49	20	1	12	16	**28**
20	16	6	2	5	3	**8**
21	18	11	5	1	1	**2**
23	5	3	1	0	1	**1**
24	40	14	4	10	12	**22**
28	33	13	0	9	11	**28**
29	44	16	6	5	17	**22**
32	33	11	3	8	11	**26**
33	33	7	4	7	15	**22**
35	31	11	5	9	6	**15**
37	23	11	1	6	5	**11**
Average	**44**	**9.7**	**2.9**	**5.7**	**6.8**	**13.2**

of 23 scored poorly (that is with less than 4 in the total quality statement column). This amounts to 17% of the participants in the peripheral category.

While this section reports results which are just as significant as, or possibly even more significant than those in the structural analysis, the depth of the discussion here may appear to the reader to be underplaying the analysis of the quality dimension of this module. However, in response to this thought, it is important to point out that for this module many of the quotations and much of discussion reported in the structural analysis provide sufficient examples of the depth of thinking and the quality of participation evident in VEP2. Further, in the following chapter detailed data from the module experience of a number of individuals and groups from this module are reported. Given this is the case, it was decided that the semantic analysis discussion here should be relatively brief to avoid unnecessary repetition.

Module three in review

The data presented in this section suggest that the VEP2 module unfolded to plan for 13 of the 23 participants, and was moderately successfully for another two participants. A further 4 participants were doing very well in the early stages of the module, but for various reasons pulled out during topic two or three. A high level of activity in the module was sustained over a 15 week period, and a small number of individuals remained active in the module to complete catch up and to complete work during weeks 16 – 20.

The quality of dialogue and thinking in the module was considerably higher than in the first two modules. There was clear evidence in the module transcript of quality professional thinking. This is shown in the quotations presented in the previous sections. The thirteen participants who worked right through all steps of the approach were not only exposed to a wide range of theory and practice ideas, but were also able to trial new activities in the classroom and then report back to the community of practice on what they had achieved.

It appears that improvements made following the experiences of the first two modules made the third module more effective. In accordance with the grounded action learning orientation of the study a number of changes were made between modules. In the case of module three (as compared to module two) there were changes in participants, in the use of subgroups and buddies, and in the time frame for the module. The content between module two and three was very similar and the number of exercises and expected entries remained the same. All of the changes will have had some influence on the improved results for this module. For example as there were a higher proportion of experienced educators in this module than in either of the earlier ones this will have helped to create a higher level of top quality discussion. However, there were also a good number of quite inexperienced participants as well. This mix is similar to the diverse community membership factor outlined in literature (see p. 49). The use of groups and buddies did not work as well as had been hoped and probably had relatively little overall impact. On the other hand the longer time span and greater time flexibility allowed in this module seems to have had an important influence on the improvement in performance in this module, particularly in the higher retention and participation rates and in the quality of thinking and dialogue achieved. However, again there were individuals who dropped out of the module relatively early, and the persistence of this issue is explored further in the Chapter 8.

The module narratives in retrospect

In looking back over the module narratives reported in this chapter it is clear that implementing the VCoP approach in practice has proven to be challenging. Difficulties in recruiting participants, retaining them through modules, and in gaining the level of participation and thinking expected in a CoP are all evident. However, it is also clear that the ALAR process employed in the study resulted in substantial improvements in the efficacy of the modules in achieving the ideals of the VCoP approach. Indeed the results of the third module were very positive.

The structural analysis has shown clear and consistent patterns through all three modules. Each module tended to:

- have a small number of dropouts; a small group who participated at a very low level; a large group of solid performers, and a small group of outstanding participants
- start very positively, but then begin to struggle or falter
- come to a complete halt, or slow down dramatically, at critical times such as the last week of the school term

Reflections at the end of each module showed that the most difficult aspect in implementing the modules revolved around the issue of time. The initial timescale of four to six weeks proved to be unrealistic. It became clear that in order to achieve the high demands of the VCoP approach a much longer timeframe was necessary. The final module was completely restructured in terms of timing and was, by a considerable margin, the most effective module.

The quotations reported illustrate the ebb and flow of ideas and emotions experienced by each module community. They also highlighted key important issues that will be discussed further in later chapters: for example the role of the facilitator and the delicate balance between saying too much, and saying too little, in VCoP dialogues.

The semantic analysis of each module has shown that there was considerable variation in the quality of dialogue across the range of the participants. The patterns were very similar to

those evident in the structural analysis: that is, a small group of participants producing lower quality contributions; a larger group producing reasonable to good quality contributions, and a small group producing high quality ones. The ALAR process helped to improve and refine the modules. In particular, extending the time frame and the flexibility aspects of the modules appears to have had a strong impact on the quality of discussion and thinking achieved.

The narrative now shifts from a focus on the story of the modules to concentrate on the stories of various illustrative individuals and groups.

Chapter Six - Individual and Group Narratives

Introduction

This chapter narrates the experiences of a sample of teachers and educators involved in the three online professional development modules at the centre of this study. In this chapter the focus is on the stories of four individuals and two school departments, and based on comments and actions, predominantly within the working life of the modules themselves. In a sense, these are live stories, telling of experiences as they happened in real time. The data for these stories are primarily drawn from the online record of the modules themselves, although in a limited number of instances some data from reflective interviews and discussion are used to substantiate and flesh out the live stories.

In the first part of this chapter the overall patterns of participation and quality of dialogue (as defined in Chapter 3 and Appendix 1) are examined. This analysis is both structural and semantic. The results of this analysis, and further consideration of the module experiences of individuals and groups, are then used to select six case studies: four individuals and two groups. The case study analysis uses semantic analysis to sift through the online text record of the individuals and groups involved to identify and report important patterns and trends. These are supported by selected illustrative quotations of typical entries in the online text of the individuals and groups involved. In the case of one group, some focus group and interview data are also used to tell the story of the group and individuals within it.

A number of factors influenced decisions about which stories to include. First, it was considered important to include the full range of types of participants. The sample includes learning area or discipline leaders, school middle managers, master teachers and novice teachers. Second, both confirming and disconfirming cases have been included to strengthen reliability and validity (Kemper et al., 2003). Third, cases involving different scales and types of activity, by individuals and groups, are also included. These illustrate, for example, the differences between those involved as the single individual from their institution, and those involved as a nested sub-community from a school department, as well as individuals.

Patterns of participation and performance: structural and semantic analyses of the full sample

In Chapter 5 various aspects of the participation of individuals were analysed as the story of each module was narrated. Table 7 displays the rankings of all 37 study participants using structural analysis data. This ranking is based on three measures of the individual's activity in, and engagement with, their module(s). The number of exercises completed, the number of postings in exercises and discussions, and the total number of words posted. In Table 8 all participants are ranked in terms of the quality of their contributions using data from the Monologue and Dialogue Discussion Analysis (MDDA) and the MDDA Quality Analysis (MQA). The Table 8 the ranking is based on the number higher order statements each individual made in their exercise and discussion postings. This is a form of semantic analysis and evaluates the quality of the thinking and dialogue of participants.

This section of the study examines these results across the full sample, rather than by each module separately. It should be noted in examining these two tables, that there are 37 separate module occurrences reported. However, three individuals, participants (23, 33, and 37) took part in more than one module. Two members of the GP module (33 and 37) also took part in the VEP2 module. One member of the VEP1 module (23) re-enrolled in the VEP2 module, in an attempt to finish the latter parts of the VEP module. It should also be noted that three individuals who were originally allocated participant numbers (7, 9 and 16) did not appear in the online record for the modules despite being urged to do so, and were withdrawn from the study.

Following this broad brush analysis, individuals who were typical of a particular type of participant are selected for in-depth analysis and discussion. Research suggests there are typically three distinct levels of participation in VCoPs core group, active, and peripheral (Lave & Wenger, 1991; Wenger et al., 2002). The ranking of all 37 individual module occurrences in the study using structural and semantic analysis data is presented in Tables 7 and 8. Table 7 shows structural analysis results, specifically the number of exercises completed, postings made, and words posted (columns 2, 4 and 6). In columns 3, 5, and 7 a percentage figure shows the degree to which individuals meet, or exceeded, the expected number of exercises, post, and words set in their module's guidelines. Column 8 is an average

Table 7: Participant rankings structural analysis – (n=37)

Participant	Exercises Completed	% of Exercises Expected	Posts	% of Posts Expected	Word Count	% of Words Expected	Average % Expected Score	Structural Ranking
2	5	100	14	140	3468	158	133	1
17	5	100	12	120	3344	152	124	2
29	5	100	15	150	2210	100	117	3
28	5	100	9	90	2995	136	109	4
24	5	100	9	90	2588	118	103	5
18	5	100	9	90	2583	117	102	6
34	5	100	7	70	2442	111	94	7
36	5	100	8	80	2003	91	90	8
14	5	100	8	80	1762	80	87	9
19	5	100	7	70	1995	89	86	10
32	4	80	8	80	2035	93	84	11
10	5	100	8	80	1428	65	82	12
37(2)	5	100	7	70	1624	74	81	13
4	5	100	7	70	1552	71	80	14
25	4	80	6	60	2019	92	77	15
12	4	80	12	80	1042	42	67	16
33(2)	2	40	8	80	1920	87	62	17
37(1)	4	80	8	80	1268	51	61	18
27	5	100	6	60	1709	78	79	19
1	5	100	7	70	1320	60	77	20
6	5	100	7	70	1266	58	76	21
35	4	80	6	60	1840	84	75	22
21	5	100	6	60	1067	49	70	23
8	5	100	6	60	785	36	65	24
15	4	80	7	70	816	37	62	25
33(1)	3	68	8	53	1283	51	55	26
26	3	60	3	30	1681	76	55	26
30	5	100	6	60	970	39	52	28
31	3	60	10	67	714	29	52	28
20	3	60	4	40	791	36	45	30
3	2	40	3	30	918	42	37	31
22	2	40	2	20	335	15	25	32
13	2	40	2	20	308	14	25	33
23(1)	1	20	1	10	318	14	15	34
5	1	20	1	10	257	12	14	35
23(2)	1	20	1	10	215	10	13	36
11	1	20	1	10	128	6	12	37

of the percentages in columns 3, 5 and 7. The participants are ranked according to their average % expected score. Table 8 shows each participant's quality statement figures as presented in Tables 1, 2 and 6. The fourth column totals the personal, interpretive, evaluative, reflective; and community specific responses and questions scores. This overall measure of dialogue quality is then used to rank individuals across all three modules.

Tables 7 and 8 show that eight participants (2, 17, 18, 24, 28, 29, 32, and 36), stood out as highly successful and engaged community members. These individuals are found in the top 11 in both tables and can be considered as strong candidates for core participant status. That is they were highly involved in the modules, often identified topics for discussion, made in-depth contributions to discussions, helped move discussion along, and in essence became co-leaders in their modules (Bourhis et al. p. 25-26, Wenger et al., p. 55-58).

At the other end of the scale participants 5, 11, 22, 23(1) and 23(2) stood out as individuals in the bottom seven on both measures. Participants 5 and 11 both dropped out of their respective modules in the early stages, and were really non-participants. Participants 22, 23 on the other hand can be regarded as peripheral members of their respective communities (Lave & Wenger, 1991, p. 35-37; Wenger et al., 2002, p. 55-58) because while they remained in their communities throughout, their contributions were spasmodic and modest. The remaining 24 participants can be regarded as active participants (Wenger et al., 2002, p. 55-58). The third and final module (VEP2) contained the largest number of core members (6). However some core members were present in every module. For example P12 in the first (GP) module (see Table 1, p. 115) and P18 and 36 in the second (VEP1) module (see Table 2, p. 129, and Tables 7 and 8 above). Similarly, all modules included a small number of members who were peripheral or early withdrawers. Each module also had a solid group of active participants.

The data in this study show that individuals at any level of experience from very experienced to quite inexperienced teachers can appear in any group. For example participant 29 a first year teacher scored in the top six on both measures and participants 5, 11 and 23 were experienced and successful teachers but appeared in the bottom six. However, the quantitative and qualitative ranking of individuals show there was a general pattern of higher ability to participate and produce quality CoP contribution with greater experience and skill background. For example, no learning area leaders appeared in the peripheral-dropout group

Table 8 Participant ranking semantic analysis – (n=37)

Participant	Personal, interpretive, evaluative, reflective	Community specific responses and questions	Total higher order statements	Semantic Ranking
2	37	23	60	1
17	28	17	45	2
29	22	23	45	2
33(2)	22	19	41	4
24	22	16	38	5
36	21	17	38	5
32	19	14	33	7
18	17	15	32	8
28	20	11	31	9
14	18	10	28	10
35	15	11	26	11
12	13	13	26	11
4	12	10	22	13
10	7	10	17	14
37(2)	11	6	17	14
15	10	7	17	14
33(1)	5	10	15	17
25	6	9	15	17
31	5	9	14	19
8	5	9	14	19
6	7	7	14	19
27	8	6	14	19
34	6	7	13	23
37(1)	5	8	13	23
1	7	6	13	23
20	8	5	13	23
13	6	5	11	27
3	7	4	11	28
21	2	8	10	29
19	4	6	10	29
26	3	5	8	13
30	2	4	6	32
23(2)	1	2	3	33
5	1	1	2	33
23(1)	1	1	2	33
11	1	1	2	33
22	0	1	1	37

and they were dominant in the highest ranking group. The skill and commitment of people at this level appears to make them ideal candidates for VCoPs. However, some learning area leaders did drop out due to travel and time issues. Nevertheless, their contributions while they were in the modules, were invariably of a high quality.

Individual case study narratives

Following the analysis above, four individuals were selected as case study examples illustrating the way each of the different categories of participant experienced the VCoP for TPDL approach. These case studies provide a wide variety of successes, failures, trends, issues and challenges that are valuable in addressing the key research questions of this study.

Participant 2

Participant 2 (P2) was the highest performing individual in study. It would appear that the VCoP approach as used in module three (VEP2) worked very effectively indeed for this participant. P2 was a well respected leader in the Social Studies community having been a teacher, a curriculum advisor, a resource writer and a professional developer. At the time of the study, P2 was supporting secondary teachers involved in a senior Social Studies project and was also teaching part-time in a teacher education programme. P2 is thus an example of the insider-old timer category (Laver &Wenger, 1991; Wenger, 1998; Wenger et al., 2002) a teacher with extensive experience across a range of teaching contexts. P2 has been recognised as a leader in the Social Studies community and valued for her ability to assist in research and development activity at a national level and in teacher education at both pre-service and in-service level.

P2 appeared in the module very early. Another participant had raised a question about how to post a photograph as their original attempt to do this in response to my request for this failed because the photo file was too large. P2 investigated this problem immediately and replied:

> I've just learnt a new skill so thank you. I can now reduce the size of my scanned photos which dramatically reduces the kbs (from 12kb to 2.6 kb).

I asked P2 to share her experience in doing this as a way of encouraging a group problem-solving ethic in the group. She took up this challenge and replied two days later with a clear explanation for all on how to do this. In doing this P2 was taking on the role of core participant right from the outset. This positive and engaged community oriented behaviour proved to be a feature of P2's participation in the module.

In a further entry on the same day, P2 noted …

> … like P6 I also found the thought of sharing ideas online with people I didn't know daunting so I agree with Paul that it is important that we get our photos online ... as this will help us build up a picture of our online CoP. Personal connections are an important part of learning and working together.

Again, in a further entry three days later, P2 continued to stand out as a person keen to be involved in thinking about the way the community of practice was developing, and prepared to put in ideas and suggestions about how the community should proceed.

> In reflecting on the ideas, concepts and procedures outlined in Topic 1 I began to wonder what other people think about how quickly an online CoP such as ours can develop. Reading through people's comments in Exercise 1 there is a common theme about how daunting it can be to put your thoughts on line when you don't know your audience well. I must admit that knowing a few people from previous experiences helps and going up to Auckland on Friday and meeting many of the North Group has certainly improved my comfort level for contributing to this group. So I wonder do we have to meet or know something more about our fellow contributors to feel comfortable in this forum or can an online CoP develop effectively without this? What do you think?

In the first exercise of the module on the community of practice concept P2 described positive early experiences within a well led and collaborative Social Studies department and in a national Social Studies project development team. P2 considered the later operated at a high level and was able to use "an email CoP to critique ideas in a professional manner". P2 considered these groups to be examples of communities of practice in that they operated in Wengerian terms as supportive professional problem solving group(s). In reflecting on these experiences and the readings about CoPs, P2 suggested that "a sign of an effective CoP is

when you look forward to getting together and enjoy the work you are doing together."

It is clear that P2 was well disposed toward the idea of a VCoP from the outset. P2 had already experienced CoP style collaboration in a digital environment in the experience of an email CoP. This was however, P2's first experience of a facilitated VCoP within a formal online learning platform (ClassForum). In the very first dialogue entry P2 made, a high level of CoP skill was evident. In this entry P2 expressed high level ideas, commented on and built upon the ideas of others in the community, and linked ideas to topic readings.   Further, P2's comments were empathetic and supportive of others in the community.

Like P32 and P35 I also found our project team was an effective CoP and CoL. This group definitely was "a supportive professional problem solving group," (Wenger). P32 is quite right when she states that over the months we were able to reach a point where we could "use the email CoP to critique ideas in a professional manner." In my view a sign of an effective CoP is when you look forward to getting together and enjoy the work you are doing together. These experiences have definitely shaped my thinking into how to conduct effective teacher education programmes and how to work supportively in a group situation.

Like P35 and P10 I have also found that many one-off in-service and PD training days don't support the concepts, ideas and procedures that have been outlined in Topic One and the associated readings. I agree with Bell and Gilbert's findings in the readings that "quality professional development takes time and requires social and personal engagement" I am looking forward now to being a part of a new CoL in this online module (a new experience for me too!)

P2 was also very quick to pick up on the dialogue partner idea tried in the initial stages of Module 3. P2's partner (P37) posted an entry commenting on and adding to aspects of P2's first entry. P2 responded to this entry and similarly commented and added ideas and thoughts to the two way dialogue.

It is good to read that your previous experience with an online CoP was positive. I definitely agree that email communications have improved our ability to communicate with our peers around the country (thereby gleaning different perspectives on issues). We

are currently creating a new email list for ANZFSSA (the Aotearoa New Zealand Federation of Social Studies Associations) so that this organisation can communicate more efficiently in line with the CoP theories outlined in the Topic 1 readings.

In this entry P2 builds on the comments made by her dialogue partner and relates it to personal experience in another context. She then goes on to say that:

> For someone who has spent a number of years working part time, on a variety of projects from home (and in schools) - developing relationships with a community of teachers and teacher educators (whether locally or nationally) is important for my personal growth and knowledge. I'm sure sole charge teachers in schools would feel the same.

Here P2 shows that she is used to working in a flexible working environment across a very wide range of educational contexts. She also explains she works part time. This fact may have assisted P2 in the module as there were, in all probability, days when P2 could devote extended time to the module; a factor explored further below.

P2 was the first person to post in the second dialogue (on the nature of values and the values exploration process) and entered a detailed and very thoughtful 430 word entry that reflected the full range of reading provided for the topic.

> Reflecting on what I've read I would say that the role of values study in SS is definitely to explore what values in society are as well as to explore values as a process. However whether it necessarily always encourages liberal democratic values in our students is another matter. Many secondary SS programmes attempt to help students practice the values outlined in the Position Paper (Barr et al., 1997). However, I sometimes feel they only superficially explore these due to factors such as those outlined by Keown in the introduction to this week's readings. Students can't fully develop, understand or value/disvalue values such as these unless they study about them, and have the opportunity to be involved in some type of values inquiry and are given time to reflect on new learning.

> I would agree with Hill (1994) and Splitter's (1996) views that "good values inquiry should result in clearer thinking about issues and society and may result in changes in

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values and attitudes." In my experience, as students become aware of, for example, the plight of children forced into child labour they can initially be quite judgmental. However when they are given the opportunity to inquire more fully into the beliefs and values surrounding situations like this and reflect on what they've discovered they often start to recognise what some of their own 'core' values are and how these may 'colour' their attitudes and beliefs. (Sometimes their values and attitudes may even change as a result of this new awareness).

I also feel that Hill's nature of values learning (Fig 1) supports my views as I thought of several examples where I have seen this working; e.g. questions: 'If you feel that child labour is wrong; (why) do you think it's alright for 12 year olds in NZ to have a paper round?; do you think about how items at places like the $2 shop were made so cheaply?'

I think you'll also see from the points above that I also agree with Engle & Ochoa (1988) and Hill's (1994) ideas about 'counter-socialisation'. Reading Fig 5 made me reflect on my teaching methods. As a beginning teacher I generally took on a 'Neutrally Impartial' role as I didn't want to be accused of indoctrinating my students (as teachers were seen as the 'experts'). However, today teenagers and my opinions and methods have changed so I feel that if you have established a well functioning CoL, you, as a teacher, can take on a 'Committed Impartiality' role when appropriate.

As seen above, P2's comments summed up key arguments from the readings succinctly, added personal thoughts and opinions about the key points made, and backed these up using logical argument and practical examples from personal teaching experience. This entry, at least in part, set the tone for following entries in the discussion. Over the next few days 3 other core and active members of the community posted similar quality entries adding to and extending P2's original contribution. P20, for example, responded with:

Like P2 I have used the child labour issue with my junior classes and marvel at how quickly the initial judgments made by the students can change when they begin to show understanding of the issue in a different context. At present I am undertaking the same process with my senior students by investigating the suicide bomber issue. Too often our students can be very 'black & white' in their judgments and history shows us what results from these sorts of attitudes to issues.

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P2 returned to the discussion some 10 days after her initial entry in this discussion. In the intervening 10 days, 10 others introduced ideas and discussed issues about the nature of values exploration in Social Studies. P2 returned to discussion commenting that:

It has been interesting to read other people's views and experiences this week. I agree with P33 that "well managed values education will assist the students to clarify their own values and help them to become more confident as independent members of society". I also agree that we need to provide a safe environment in which they can confidently express their points of view. I found P1's point about "believing something to be true verses knowing it to be true" quite thought provoking as it reminded me of a discussion I was involved in last year about the accuracy/bias of current TV news and newspaper reporting (this discussion was based around the war in Iraq and what the world was being told verses what was actually happening. Interesting discussion especially now that Pres. Bush's actions have been questioned.

This entry shows P2 responding positively and warmly to the whole group and then more specifically to two other individual members directly. In her following entry P2 responds directly to her assigned dialogue partner.

A message for my dialogue buddy P37. I was intrigued to read your comments about getting students to consider how German society allowed the Holocaust to happen. I also worked with some students on this event last year.

The message went on to recount a comparative incident in another class that P2 had been working with in a research context and shared ideas about how that group handled a similar situation.

In the third discussion, which focused on sharing ideas on successful values exploration activities for the classroom, P2 entered the dialogue after nine others had posted ideas, examples and thoughts. This was a detailed entry reporting on a range of values exploration activities. However, one was outlined in detail.

One activity that worked well last year was during a unit on the Stolen Generation (SG) in Australia. During this work students discovered that John Howard (the Australian Prime Minister) wouldn't formally apologise to the SG. Several students initially stated that they felt he should apologise. What an opportunity for great VEP! I provided the class with speeches made by John Howard other political leaders and members of the SG. We then formed expert groups for each person/group represented. After some reading and discussions the class was then regrouped to share information from their expert groups. We also discussed John Howard's personal views/position verses his view/role as Prime Minister as the material provided info on this. It was wonderful hearing some healthy and informed debate during this work. I feel the tasks that were included in this unit gave these students ample opportunity to explore and analyse various views on this issue, understand the implications for Australia if John Howard did formally apologize, and to state (more informed) opinions on what they felt should/could be done (both in role and personally).

This kind of entry does not include any discussion of literature, nor does it respond to any of the earlier entries made by other community entrants. However, this entry is a good example of what Bell and Gilbert (1996) describe as sharing of stories and anecdotes from the classroom. They also note that such stories appear to be highly valued by teachers as a key dimension of quality TPDL. As a consequence this style of entry is a very important part of quality TPDL learning communities.

There were further rich examples and discussion of one another's ideas with 11 further entries by other members of the community over the next 10 days. P2 returned to the discussion (May12) and noted:

Thanks for your inspirational ideas! It's been wonderful to read the variety of approaches that we have all used to explore this area of our curriculum. I've recently been collecting a variety of newspaper articles and other resources to use in a couple of sessions that I'm about to run with some pre-service teachers and teachers returning to teaching. Naturally I want to model and provide some positive examples and ideas for teaching VEP as part of these sessions. Consequently I have found the discussions and ideas that people have submitted to this forum very helpful as they've made me reflect on the strategies and approaches that I tend to use. Hopefully I'll now be able to provide a broader range of approaches and strategies in my forthcoming teaching.

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As well as contributing to the collective well being of the group with a positive message of encouragement and inspiration, this entry shows P2 reflecting on the quality of the contributions and ideas of others and benefiting from them in two ways. Firstly she noted that being part of the community and reading the discussion and ideas had caused her to reflect on the strategies she tends to use, and caused her to contemplate using a broader range of approaches in future. The entries imply she would be doing this almost immediately in sessions she was about to run with pre-service teachers and teachers returning to teaching.

Again in discussion four, focusing on ways in which participants planned to implement a 'new to me' values exploration activity in a classroom, P2 came into the discussion relatively late, some four weeks after the discussion had opened. She began the entry in her usual fashion with a positive comment, "Boy what a lot of possibilities to try"! In saying this P2 was, in all probability, referring both the rich range of ideas contributed by other members of the community, and to the range of suggestions made in the module readings for this topic. Then in a very extensive 588 word entry she noted:

I've decided to adapt the 'possum picnic' activity outlined on pg 11 of our readings to (become) one based on terrorist threats. It is quite timely with the Israeli men who recently tried to obtain NZ passports and all the discussion about terrorist threats to NZ etc.

P2 labelled the activity "Terrorists" and described this activity as "an action or experiential learning activity followed by a community of inquiry discussion." She explains it was adapted from a 'possum picnic' activity provided in the module readings for the topic which was based on an activity devised by Barry Law of Christchurch College of Education. Most of the remainder of the entry explains in detail how the activity was planned and would be run. She also explains that:

I'm intending to try this activity out this week with a group of pre-service teachers during a session on practical ways of teaching VEP at levels 5-8. I may then be able to develop, adapt and/or refine this activity later this term with P20 and her Yr 12 students during their unit "Roadmap to Peace". Naturally any suggestions from our group re wording etc would be gratefully received.

This entry shows a high degree of openness to try new ideas, and also invites other members of the community to assist in fine tuning the activity prior to implementation. As reported in Chapter 5 earlier, P32 suggested P2 change the description of this from game to activity or simulation. P2 made the change to activity and a week later reported:

I got to try my terrorist activity out on Monday with a group of pre-service teachers and surprisingly it appeared to go really well. I'll be making a full report in Ex 5 soon.

P2 continued:

But while I'm online one of the additional discussion points Paul raised in Ex 4 was whether most of the strategies outlined can be used by students at all levels. My first reaction was yes, you can, however, on further reflection I do feel that some strategies are more meaningful and appropriate to use with certain groups of students e.g. preschool children as well as adults can happily cope with the character education and inculcation approaches (as outlined in section A of our readings).

However, I feel it takes maturity and an ability to think beyond one's own needs to do full justice to the moral reasoning and social constructivist approaches as outlined in Sections C & D (of our readings). … I definitely feel it takes time, practice and maturity, as well as the right environment, for students to develop the skills required to fully and critically analyse an issue and dialogue (rather than debate) said issue. How these link to age (or the skill of the facilitator) is no doubt open to debate!

So in this entry P2 again shows a high level of thoughtful reflection on module readings and debates about what students at various levels are able to achieve in the values domain. This ability to both pick up new ideas and adapt them to an immediate classroom application, to think at depth, and to dialogue with others in the module about what this involves, is very good example of how a VCoP approach to TPDL can operate. Further, the way P32 responded to the invitation to comment, and the way P2 in turn responded to the advice also showed the ideal of a community of practice as a supportive positive problem solving community in action.

In Exercise 5 P2 was the first participant to report into the community with an evaluation and reflection on her new values exploration activity.

As promised here is my evaluation and feedback from my terrorist values exploration activity. As I stated in Ex 4 all the participants got stuck in and enthusiastically carried out their allotted tasks during this activity.

P2 went on to identify and discuss six elements of the activity that she considered could be improved to make the activity even more effective. She also included an attachment to her message which contained a revised version of the activity. She concluded:

I think this action or experiential learning activity followed by a community of inquiry discussion is a fun way to explore and analyse values. By having the community of inquiry discussion in stage 3 you really have a great opportunity to have an in-depth discussion about values and truly meet the aim of SSNZC.

P2 also felt the activity and the approaches involved highlights:

[T]hat the essence of Social Studies involves students developing ideas about human society through looking at social participation in events and/or becoming personally involved in these events or issues. While also understanding the personal and social significance of the ideas they are dealing with.

Also in reflecting on the activity P2 went back to the issue she discussed earlier on what kinds of activities are suitable for students at different levels. She notes that:

One interesting thing I have discovered in looking at the links between the questions in this activity and the values exploration indicators in SSNZC is that while this activity is aimed at getting students to work towards level 7-8 indicators teachers could also use it at level 3-4 by slightly reworking the questions in stage 3 into more manageable language.

She concludes by adding:

Naturally if anyone else has the opportunity to trial this activity with their class I'd welcome your feedback.

I replied on the following day and said:

Great to see the exercise went so well and that in running it through you were able to identify a number of points where the activity could be refined. Good too, to see that you

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can see potential for the activity to be used at either level 7/8 or indeed lower down with a few refinements. You seem to be suggesting that it has real potential at any level from level 3/4 up.

A question out of interest. I would like to know what kind of answers your community of inquiry came up with in Stage 3. Were you happy with the level of values thinking that emerged? Facilitator

Some 20 days later and after five other community members had also reported on the outcomes of their class trials P2 returned to the discussion to respond, apologizing for the delay because she "had been out of town working and had some deadlines that just had to be meet." P2 commented:

In response to your question, the level of thinking and discussion in stage 3 of my activity was very acceptable (as I would have expected from a group of pre-service teachers) [and] the overall concept of this activity is sound and it provides a beneficial and stimulating learning experience for students.

P2 then posted two further messages. One was for her former dialogue buddy, although the community was, at this point, working as one large group and was not formally using the dialogue buddy strategy. The second was to another community member. In the first of these P2 made a number of supportive and encouraging comments about her colleague's activity. She also asked:

Regarding social action is there anything in your school (community) that you could base this (activity) on? E.g. do you have foreign students? If so your class could survey them to discover whether there is anything that could be done to help break down barriers/ stereotypes, peer support, out of school social functions, home stays, language discussion groups, signs etc.

In the second she posed an interest question to P10:

P10, what did your students decide about changing the drinking age back to 20? I know opinions in our local community are split on this (our local paper surveyed people on the street for their comments recently). The council has also recently imposed a liquor ban in

the centre of our CBD area which has caused some outrage as people are now being fined for carrying alcohol there.

Thus as well as showing interest and providing encouragement, in posing questions like those put to P10, P2 was challenging other members of the community to think further and look at other possibilities. P2 is thus an example of key aspects of being a core member of a CoP, an ability to act as a de facto facilitator: someone who supports, encourages, provides ideas and options, asks key thinking questions and gently challenges and extends participants. P2 was just one of the participants able to do this regularly. Other core members, and at times a number of the active members, also assumed this kind of role within the community. Again this shows that the participants were quick to appreciate the key behaviours necessary in establishing and maintaining a quality community of learning, in an online context.

Participant 29

Participant 29 (P29) was, as in the case of P2, a highly successful member of the VEP2 learning community. She was a full-time teacher in a northern city multicultural secondary school, teaching Social Studies at years 9-12. She was fully engaged in posting entries, and the quality of her dialogue in the MDDA and MQA scores was high (third on Table 8, p. 160). It would seem that the approach worked very effectively indeed for her. P29 has been selected for deeper analysis here because she is a particularly interesting case as, in contrast to many of the other individuals who scored highly enough to be considered core members she was a first year teacher. So while P2 and other core members were often capable, skilled and very experienced teachers, P29 was just starting out in the profession. In classic CoP theory P29 should have been in the outsider/newbie category (Lave and Wenger, 1991; Wenger et al., 2002).

P29 came into the module some nine days after the first exercise/discussion began. In her introduction P29 signalled her inexperience but expressed strong interest in SS and in the prospect of the CoP experience and in particular "probing all the minds of you experienced teachers out there!" P29 launched into the module in some depth right from the outset. In exercise/discussion one she expressed her feelings about being in a CoP as a novice/newbie as:

I really enjoyed the reading and I know I will certainly be making the most of those key thought leaders in our group. For me as a new teacher I am in both a lucky and unlucky position.... I haven't reached the point where I am set in my views of what a teacher of Social Studies is, so I am very open to new ideas, activities and views: on the other hand I feel a little overwhelmed by the 'advanced' views that you others have. ...

… I am enjoying the opportunity to see what others think on the topic and look forward to where this will take us all in the future. I personally see it as a very positive opportunity to learn and share and challenge … P17, I read your message and just need a bit of time to sit back and chew it over as it raises the level for me a bit with regards to what I have experienced so far in teaching Social Studies.

P29 followed this up with a confident response to another community member's entry with thoughts on her own students. The response showed a high level ability to reflect on teaching experiences and use these in discussion with more senior colleagues.

I get the feeling from some of my students that in some ways that is what they would prefer the teacher to be. Whether this is just laziness and a disinclination to work through and process information themselves, or an actual want, I am yet to decide. A class example, I recently interrupted my unit to focus on an essay writing competition about Monte Casino - I took this opportunity to practice the inquiry process. Three lessons into this my students were horrified when I told them to educate me, as I did not know anything about the battle of Monte Casino - it certainly showed me those in the class that were waiting for me to 'teach' them.

On the following day I responded:

P29 your experience of students wanting you to 'teach' them rather than take on the 'inquiry learner' role is interesting. I think it shows that the expert - apprentice model (as in the PowerPoint I put up earlier) is a very strong expectation in the minds of students. Along with others in this discussion I think there is definitely a place for the teacher as expert in classrooms. However, it is also important that students are able to use a 'Community of Knower's model' approach too. In a way these can perhaps be thought of as 'tools' that we use when most appropriate. I think students are often reluctant to take on

the inquiry learner contributing to a community of knowers approach. Getting past this 'block' can be tricky. I think skill development and motivation are often involved?

<div align="right">Facilitator</div>

P29 then responded two days later with:

Thank you for your feedback Paul, I agree that there is a place for an expert teacher and I think that as a first year teacher I am sometimes reluctant to let that role go - not that I'm an expert! I also agree with the need for students to become part of the community of knowers but as you said teaching them the skills to do this is the tricky bit and I think that we should be encouraging it before students even get to secondary school.

These messages show P29 as a teacher keen to discuss ideas, readings, teaching practice and teaching issues. This sequence also shows that the CoP facilitator needs to play a role in ensuring that there is prompt feedback to individuals. If there is no response from others, particularly during the first few days of their involvement in the community, participants can quickly lose interest.

Exercise 2 included a very interesting and in-depth discussion of a number of issues, including the extent to which Social Studies in general, and values exploration in particular, support and encourage "liberal social-democratic values" (LSDV). P29 began the discussion supporting those who argued Social Studies should not be promoting LSDV and should focus on teach the skills of values exploration. The facilitator and some other members of the CoP argued otherwise. P29 followed the debate closely and responded soon after:

Thanks Paul for your feedback on the LDVP, I was viewing it only as 'our' way of thinking and viewing the world, but your 'definition' does make a lot of sense to me. I think that I would now change my position in view of this new perspective and agree with you and the others Paul. But I wonder do we have enough experience of the world, and all the values that make it up, to be able to teach it without our own values shadowing them? But in retrospect as others have said before, it is more about teaching the skills to analyse etc than the actual values.

This shows P29 as a young teacher thinking carefully about her beliefs and ideas about

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teaching, and as willing to reassess and re-evaluate on the basis of argument discussed in the CoP. In Exercise/Discussions 3 and 4 P29 continued to dialogue very effectively and to both provide good ideas to the community and use the community effectively to improve her own knowledge and understanding. The following three entries illustrate this.

I am currently experiencing my first Values Exploration with my students and it has been an interesting process. I have found that even at level 2 our students have very fixed views of right and wrong and find it difficult to put themselves in others' shoes. At the moment we are studying the Berlin wall and I have many students who cannot comprehend people wanting communism or the wall to stay up etc. For me this answers your question Paul as to whether VEP needs to be a process through the levels or whether all aspects should be taught and discussed at each level (Fig 3). I believe it needs to be a process, to start with basics and move through the process in a logical sequence through the levels. (Entry 1)

I am looking forward to adapting the Stolen Generation unit for Level 2 and appreciate your ideas P35. I will be focusing this topic on Values Exploration and look forward to incorporating these into the unit. I am going to use Rabbit Proof Fence to get the students to identify VP and then reflect on why those people have those positions and what response they had to each other's positions - wish me luck! (Entry 2)

Thank you P17 for your suggestion of a VE activity aimed more specifically at older students. Although there is a bit of work collecting (or creating) a selection of resources, I think that the activity allows the students to think at a higher level than a values continuum and also have the benefit of a visual hardcopy layout. Could you explain the 'bus stop' idea to me though? (Entry 3)

 Throughout the remainder of the module P29 continued to express excitement at the range of useful ideas she was gaining from the community and from the module. Later in the module, in Exercise 4, she noted:

Being a newbie has its advantages!! All these offerings are new and exciting for me - I am really enjoying reading the variety and adaptations that all you guys have put forward. I thought I would try Sample Values Clarification Value Sheets No. 1 (from module readings). … I will give them a copy of the lyrics of Bob's song 'the hurricane' and get

them to underline the places where the person tells you what they think about things etc

Perhaps, given her inexperience, and the fact that she felt she was not able to offer as much fully classroom tested advice as P2, means that it would be more accurate to describe P29 as at the high end of active participant range, rather than as a core participant. On the other hand, the way in which she provides regular ideas and input and dialogues with others effectively in her comments of response, appreciation and questioning, she draws others more strongly into the community and this sense she is a core member of the community. In any event, P29 is certainly a very good example of the way in which a beginning teacher, working as the only member of her school in a community, can become fully engaged and gain a great deal from a VCoP style of TPDL experience.

Participant 11

Participant 11 (P11) provides a very different case from P2 and P29. P11 achieved the lowest score of any participant on both the structural analysis and semantic analysis measures in Tables 7 and 8. P11 was an experienced teacher and a school department leader. However, he was new to New Zealand having recently joined the staff of his school from an overseas country. He was also a member of the Beacon Project. Some of the reasons for his lack of success are explored below.

P11 participated actively in the module on only one day. Initially, he appeared to be positive about being involved. In his first message posted at the end of the attachments of readings for topic 1 he said:

After some initial teething problems I am pleased to be on line and exploring the site itself. The readings on community practice and learning, after my initial fear of heavy down load, were surprisingly reassuring in what I think most of us try and do within our departments and hopefully through this forum and the beacon project. I will hopefully now be able to find other people's messages and discover more.

This indicated that initially P11 found the reading material to be more helpful and reassuring than he had expected. However, he appeared to be having some difficulties with finding things and using facilities correctly in the online site for the module. This first posting

was, in fact, in an area where others did not post messages, as this was intended as an information space only.

His second message, posted some 25 minutes after the first one, voices further frustration with finding his way around and using the site. Again this second message was similarly misplaced in the module overview and timetable area, a space used by me to provide an explanation of the module structure and timetabling.

Hi P11 here and I seem to be mass posting messages not necessarily in the right order or in the right places. [I] really enjoyed the Friday session on values, and many thanks to P4 for the socialization stuff that I unexpectedly received through the post today. I will attempt to find a suitable photo and will catch up on the units ASAP.

A half an hour or so later P11 posted two further messages, this time in appropriate places. In the first of these he made an interesting and appropriate entry in the first dialogue.

The community of practice in my eyes is making time to do the simple things of passing on knowledge between professionals. Too often I fear we do not see the wood for the trees as we end up so busy. This project I hope will make me pull my head out of the sand and look at the big picture, and as P28 pointed out actually reflect on what I am doing and take the opportunity to discuss what good teaching others are doing elsewhere, and how the wheel does not need to be re invented but rather adapted to suit the often very different environments in which we all work.

This posting shows a positive start in the module. After initial problems in finding his way around the site it appears here that he was beginning to navigate the site and work out where messages went. Further, he had clearly accessed, and read, the key resources for topic one, and the responses and thoughts of other participants. He in turn made a good initial response and comments on the ideas put forward by another community member. This represented a good start from someone who had not taken part in any form of VCoP before.

Following this he posted a message, again appropriately, in the introductions section where he expressed positively that he was "pleased to be on line and an active participant in this project." But, unfortunately, this was last time P11 participated in the module.

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P11 took some part in a focus group some three months after his initial efforts to establish himself in the module. In his responses P11 outlined two main reasons why he did not continue in the module. The first because the "sheer scale of work at school requires me to make judgments on (the) time to give to professional development." He also considered the whole process and the content involved was very academic and theoretical and put him off in the early stages. He commented that he had heard the latter parts of the module were more strongly oriented toward teaching activities and that this would have been interesting for him.

He reiterated some of these reasons for dropping out in the final questionnaire where he noted that the time required completing the module, and the complexity and difficulty of the module materials, caused "quite a lot" of challenges for him. He also indicated that the heavy time demands of work and personal life caused a "great deal" of difficulty, as did the length of exercises and discussion entries. Consequently he made an early decision to discontinue in the module.

Clearly, P11 was under a great deal of time pressure. He was also strongly opposed to "spend[ing] time arguing over theoretical concepts about learning." He wanted prompt attention to the practical aspects of the topic at the outset. Interestingly, P11 was the only person to take such a negative stance to the module emphasis on theory alongside practice. While a number of others did have reservations about the theory content (see questionnaire results in Chapter 7) most accepted that it was a necessary component of the module and were prepared to persevere and work through the theory barrier, in order to improve their understanding and be able to use theory to improve and diversify practice.

It could be argued that P11 did not really give the module enough time in order to see how the approach actually worked. At the point he decided to withdraw people were talking ideas rather than working with strategies. However, the module was in the very early stages (just part way through topic one) and topics three, four and five all had a strong practical teaching strategy focus. However, as P11 had withdrawn by then and did not get the chance to engage with the more practical material.

Participant 14

Participant 14 (P14) is drawn from a different sub-group of the sample. P14 was an experienced teacher, but not one who has assumed a subject leadership role in her school. She was the only teacher of senior Social Studies in her school, but she does not hold a position of responsibility in relation to other teachers of Social Studies or any other field of Social Science in the school. I categorised P14 as a master teacher, a long standing and experienced teacher, but not one who has been promoted to a position of responsibility and leadership. In respect to the three roles within a community of practice P14 can be regarded as at the high end of the active participant category. P14 scored, ninth on the structural analysis and tenth on the semantic analysis scores. However, as the discussion below will show, these relatively high scores need some qualification.

P14 was an interesting participant in that she entered the module early and at that point posted her introduction. However, she did not begin to complete any exercise and dialogue work until the 7th and 8th week of the module. These two weeks were in the school holidays. In the long break between her initial entry and her reappearance in the module weeks later I contacted P14 to see if there were some difficulties that I could help solve. P14 indicated that she was finding it difficult to master the technical aspects of the module. As p14 lived in the same town I provided a face-to-face tutorial on using ClassForum and the online site at the beginning of the school holidays. This extra intervention was successful, and during the two week school holiday period P14 worked relatively intensively on module work and completed three exercise/dialogues.

Because she was completing her work in Exercises 1, 2 and 3 well after most of the rest of the community had moved on, P14 could probably be regarded as a peripheral member at this point. That is she was still in the module, but not actively participating directly with other members in the community. In her first entry after re-engaging she immediately reflected on the timing of her involvement in relation to theory on CoP.

Hi everyone At last I am underway. I feel that I am a negative example of the points 2 and 9 of the key aspects of successful communities of practice, in that I have not made sufficient time available nor been easily able to negotiate my way around the technology. This all goes to remind me that it takes inordinate amounts of time to establish the setting

for communities of discussion which will allow for talking, listening and reflecting back of ideas. When we try this in our class rooms we often fail to make progress because we do not allow enough time for discussion or spend enough time to get everyone ready to begin.

In a second entry in Exercise 1 on the next day, P14 responded to the ideas of others and shared her own ideas.

P3, with regard to your first message I agree that there are times where the ideals of CoP are totally meaningless and completely overshadowed by an autocratic management or school board. However I have found that by proceeding with the principles of respect, collaboration, and attempt to develop a significant voice as outlined by 'Allan Collins', progress can be made.

It is encouraging to note that there are many of us struggling with the technology! There's hope for me yet.

However, as others had moved on the only direct response was from me as the facilitator.

Hi P14, good to see you are underway. I like the reference you make to the principles of respect, collaboration, and developing a significant voice as very important in establishing good discussion communities either online or in the classroom. I agree too that for people starting out in online learning the technology is likely to take a while to get to grips with. However, it is also a thing we can, in this kind of community, help each other with.

P14 did not make any further comment in Exercise/Discussion 1 but moved on a few days later to Exercise/Discussion 2. In her first entry in this exercise P14 made some insightful comments on the topic readings. Following this P14 (as indicated in the time of postings) appears to have spent all afternoon the next day reading and working in the module, and posted two further entries in Exercise 2. In the second entry in Exercise/Discussion two she responds in general terms to the discussion of others earlier, and in particular to a comment I made.

Paul I am interested in the definition of "quality debate, quality information" which should lead to having the best evidence for decision making. It seems to me that for this to operate (as) well as we hope in our society then we need to examine the truth / bias and background of quality information - and we do not specifically define the tools to do this or teach these to students. I often get students to look at who wrote the information, why, what is their background, what is their vested interest in a particular outcome and how can we judge what they say? I would like to find better ways of evaluating material before decision making.

She also asked questions that would have been good ones in an active community, but because most others were now working in the final two topics of the module, again the only response was from me. P14 then moved on to post an entry in topic three on the same day. P14, even though she was not really integrated into the community at this time, was appreciative of what others had contributed and felt benefits from it.

Good morning. Great to read what others have to say. It is good to see acknowledged the interplay of "objective Social Science inquiry and the subjective values inquiry" I think that values can be explored at all levels and although it is a progressive development of thinking it is possible to achieve this with younger students. However, this takes skilled teaching and leadership and time.

She addressed gratitude to both the group as a whole and to specific individuals.

Thank you all for the ideas shared they have given me thought and tools to extend what I already do. P17 I liked the way you had a template of criteria to sort information that students may be reading on an issue and I will certainly incorporate this into my planning.

A number of you are using the Stolen Generation as a good topic to use in this area and I'm interested to look into this more as I do not have any Australian topics in my current plan.

It seems that we all use current events issues to carry out VE and I now have a few new ways of doing this: continuums, expert panels, the mediator, tables of analysis etc.

Thus even though P14, by being so late into the community, was a peripheral member, there is still clear evidence in these entries of thoughtful engagement with readings, and the ideas and discussion points of others. However, because she participated after the best discussants in the module had moved on well ahead of her, P14 did not have the satisfaction of gaining any feedback and comment from other members of the discussion community (apart from me).

In spite of this lack of feedback, P14 continued in the module and completed one entry in Exercise 4 and one in Exercise 5. In the Exercise 4 entry P14 showed she had been reading the module material closely and thinking about how to use some of the suggestions included.

I am going to include a moral reasoning task using the key questions in Fig 2 and the Socratic Inquiry Model in Values and Social Issues. I then thought that I would follow this up with a class activity similar to the four corners approach which will enable the students to express their views and give reasons for their views and allow other groups to challenge their reasons. … Finally students will be asked to write a letter to the editor of the news paper in which they outline what they have discovered, their own opinion about it, and one possible action which could be taken to resolve the problem.

P14 does not, however, make a second entry in Exercise 4, and therefore failed to comment on, or respond to, others ideas about what they were planning to do in their trial activity. In her Exercise 5 entry P14 notes:

Moral Reasoning - I have used this method with my Yr12 class as well as the Yr 10s which I outlined in (my last entry). I will report on the Yr 12 which was more recent and because I was away from school during the Yr10 topic (and) it became disrupted and it was very hard to get the students back on task. The Yr 12 students were given a Moral Reasoning Template which I had adapted from the original.

P14's report on what happened was brief and fairly vague.

My class, being what they are, responded well to the discuss[ion] and took much more time than I had originally allowed to read and discuss the material. … For the second part

of the process I had to insist on quietness so that all students would become engaged in putting their ideas to paper.

Some of what she planned to do in her trial had not been completed.

The third task is to write an essay. This will be my way of assessing the knowledge and understanding that this strategy has allowed the students to achieve. I will then also get the students to evaluate the strategy for future use.

Clearly, P14 was a peripheral member of the community. This is partly because she was so late into the community and thus was not really integrated into the full discussion life of the community. P14 does show in her work in the module evidence of thoughtful engagement with module material. She also shows ability, in her initial work, to respond to others and to pose thoughtful questions for discussion. However, as she gets no feedback from other members of the community (apart from the facilitator) this aspect of her work in the module does not continue on into the later exercises which become progressively briefer and more routine.

However, P14 still appeared to gain considerable benefit from the community and from her peripheral engagement with the approach. While she was not a full and active participant in the community in the CoL/CoP sense, she appeared to have learned a considerable amount from her limited involvement, and felt positive about what she had achieved from it.

Group narratives

While the stories of individuals are informative and reveal a great deal about the way the approach worked they tell only part of the full story. There were two groups of people who took part in the modules in a different way than the individuals reported above. The difference was that the groups of people examined below worked in the same location and formed a sub-community within the wider VCoP. Thus they formed a school community nested within the national module community. These sub or nested communities did a substantial amount of informal and formal face-to-face work at their local site. This assisted the individuals involved as the stories of these two groups show.

School department A

Participants 1, 6, 8, 10, 21 and 37 were all members of the same school department and they participated as a group, as well as individuals, in the successful VEP2 module. Participant 37 was the Head of the Social Science faculty at the school and had participated in the 1st module in the study (GP module). She explained in a post-module interview that, in terms of Social Studies, as HoD of a school in a more remote area of the country, she found it difficult to get good quality TPDL opportunities for her staff. She saw module three as way to get "good quality material from a university" and to network her department with other professionals. She further explained that she "thought it would be very good for the department" and that it fitted with her teachers' desire to "up-skill themselves in new strategies for teaching the processes". It was further a convenient way to meet the departmental aim to up-grade their ICT skills.

P37 decided to hold a departmental meeting each Wednesday for one hour after school for the duration of the module, and dedicated that time to a departmental workshop on the module. She negotiated with her staff that there would not be any other departmental meetings during the time they were engaged in the module TPDL experience. During this hour the department met together in the school computer room. They started each session by working through any difficulties people were experiencing with the module work for that week. This typically included sorting out technical issues and/or discussing the readings together prior to completing exercise entries online. Departmental members did as much as they could on the module in that hour, but then often did further work on the module in their own time.

P37 noted that "some of them, some of the younger ones, would come in and read it and zap through it and get it done real quick", whereas some of the more mature staff would "go away and read it, and regurgitate and really think about it". So within the department, as in the module as a whole, there were different levels of response and involvement. P37 also began, as the module progressed, to download and run off the readings for her department. She also kept all the online materials in a bound folder as a permanent reference for her department. She emphasised that the focus on strategies in module three was particularly valuable, and having a full printout on file meant they could go back and look at other strategies to try later.

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P37 noted that working together as a department was a good way of gaining commitment to the module and keeping everyone going right to the end.

> Because we did it as a department … we could discuss where one another was up to, and because I often handed out (the readings) into the pigeon-holes before the meeting … everyone was aware of where everyone else was up to, and it kept people going.

P37 also noted that when the module got to the trialling of a strategy stage, there were distinct advantages in working together as a departmental group.

> We had a bit of a talk together because … you didn't want them to overlap, you wanted people to do different things and so we talked about what we were doing. … We also had a departmental meeting where we talked a little bit about our strategies and how they had gone and what we were doing. So that was good too … to have those … collegial moments where you could discuss it.

School Group A began in the module on the 3 March with their initial entries on CoP. Six of the seven posted entries for Exercise 1. Five did this at their meeting on the 3rd and one the following morning. P1, who was ill on the 3rd, did not actually make a first entry until the 15th. The second and third weeks of the module were relatively quiet for the group with just three entries on the 10th and a further three in the following week. However, the fourth week was a very productive one with 10 messages posted by six of the seven members of the department on the 24th of March. Three further messages followed in the next 2 days. In this week the group completed most of their work in Exercises 2 and 3.

The next two weeks leading up to the school holiday saw a very little activity in the module from the group. P6 posted one Exercise 3 entry in week five and P10 one in week six. Because this group, as a result of regular meetings and working together was, by and large, up to date, they were a marked contrast to individuals like P14, who used the holiday period to catch up. School Group A took a complete rest from module work over the term holiday break.

The group was prompt in getting back to the module in the first week back (week 9 of the module) and five of the six in the group completed Exercise 4 entries during this week. This

meant they were all set up to carry out their trial activities. They completed this work over the next four weeks and held a busy and productive meeting on the second of June, when four of the six completed Exercise 5 entries reporting on the outcomes of their trials. A fifth completed a similar entry before the end of the week. All members of the School A group had thus completed the bulk of their module work by the end of the 14th week of the module. However, one member of the group (P8) was left behind and did not finally complete any Exercise 4 and 5 entries until the very last week the module was open (week 20), in the second week of the second term holidays. However, the fact that he was part of the school group, and all the others had completed the module, was probably a factor encouraging P8 to complete the module at this late stage.

When the work of this group is examined in comparison to the standard of work across the whole sample we find that four of the individuals P1, P6, P10 and P37, appear to be solidly in the middle of the active category of module participants all ranking between 12th and 21st in the structural rankings and between 14th and 23st in the semantic ranking. P8 and P21 scored solidly in the structural analysis (24nd and 23th). P8 also scored well in the semantic analysis (19th) but P21 was much lower at 29th. Nevertheless he completed the module.

The six teachers in School Group A reflected on their experience of working together in a focus group discussion toward the end of the school year, some five months after they had completed the module. They noted that working together as a group had distinct advantages. They found the fact that the HoD had printed out and posted the readings in their staff pigeon-holes prior to their scheduled weekly meeting was helpful because it enabled some reflection prior to the meeting, and put them in a place where they were ready to brainstorm about it at the meeting. They found the in-school group discussion group was helpful, particularly when dialogue buddies where not active in the module, or when dialogue buddies were operating at a vastly different level.

> The person I was buddied up with … was referring to one of the references you had in your readings. She'd obviously gone away and done that, and she was talking about things I didn't know anything about … there is a problem in that communication … you're not actually getting much out of it because you're not standing on the same footing.

Working together as a group, one hour a week helped build confidence and overcome

potential problems and frustrations. Members of the group commented in their focus group discussion that:

It is just reassuring; we're up in the lab there, able to discuss things among ourselves. There have been plenty of times when I would have been completely shot making any real progress.

It was very informal wasn't it? Somebody would jump up from their computer and say 'What does this mean?' or 'How are we meant to do this?'

Often somebody [who] came in early … or who'd been on the night before would say 'Oh look this is where we are going, this is what we're doing and this is where you should be pressing, this is the reading down here.'

Individuals in School Group A also mentioned the benefits they gained from taking part in a module that connected them with a wider network than that available in their own school, or indeed in their own district.

We need professional development. We need to keep up with what is going on. I find living in our district in terms of collegial support … and professional development is very limited. You don't have your networks. I really enjoyed hearing what other professionals from other areas had to say.

It is a good way to get some expertise, because we don't have a university in our area … we haven't got those facilities that other big cities have.

Clearly School Group A benefitted from the way their HoD set up on-going departmental TPDL in association with a national online TPDL group. They had the benefit of local support and discussion alongside the additional reading and input available for the module, and from discussion ideas and view points with colleagues in different schools and situations. One of the most interesting features of this group, was the way they used school timetabled time to work together appears to have been important in keeping all six members of the group in the module right to the end.

School department B

School Department B, however, had quite a different experience. School B was a large multi-cultural co-educational school in a large city. Initially four members of the school's Social Science staff enrolled in the second module. Two of these were relatively senior members of staff, holding positions of responsibility in the Social Sciences faculty. Two others, while experienced teachers in overseas schools, were new to teaching in NZ and to teaching Social Studies. One member of this group entered a biography in the module site some three weeks into the module. However, in spite of a number of email reminders, and an email response assuring me she would take part, this individual did not enter any material in the module exercises, and so was removed from the sample. The other three members of School B, 22, 25 and 26 took part in the module.

Participant 25, the leader of the School B group, completed the full module and appears was a mid-range active member ranking 15th (structural) and 17th (semantic). She was very positive about the module and its potential in her department.

It is good to hear that our last (staff) member has now linked in to the site. We are talking at school obviously about Values etc, so we are going beyond the online Community of Practice.

But she also signalled that there were some problems:

We have just had a parents' report night last night, so that we are all pretty busy at this time. Also of course the 'worm' that was affecting our school was a nuisance, but all is now solved, I think!

Further she noted that while not competing much online, her staff was gaining value from the module.

I have been talking to the other teachers from (our school) about not seeing their responses on line. Is there an extension given to these people, or will they just not complete? Definitely they have done the reading and seem to be enthusiastic about using values exploration in their classrooms.

P25 also felt she was gaining a great deal from the module personally:

I have in particular, really enjoyed this course and it certainly has made me think and helped in planning and teaching 1.5., [a values exploration standard at level 1 of the national assessment framework]. So, many thanks for getting it all together.

P26 completed entries in three of the five exercises on a spasmodic basis. A number of P26's actions show that she was not confident in the module on two counts. Firstly, she lacked confidence in her ability to work in an online environment, although she was keen to learn.

This will be the second time I am involved with online learning. I just recently completed the Infolink: Information Literacy Skills module with ACE (Auckland College of Education). The course comprised 3 face-to-face (F2F) sessions and the rest was on line, for the whole of term 2. I wasn't very good with the online part (would like to improve on this) and I think TIME for me was the biggest constraint. It is my intention to do most of my discussions at school (non-contacts, lunches, after school). BUT our system at school has not been very reliable for the last couple of weeks. So that could also be a setback and quite frustrating. Maybe because I am quite a talkative person, I prefer the F2F.

P26 made numerous technical mistakes throughout her time in the module and needed rescuing on a number of occasions by her husband and by me. Her experience with Exercise 4 provides an example of this. In a message to me in the 'office' area she wrote:

Can you assist? I have just deleted my response to Exercise 4. I do my exercises in Word and then paste it to Class Forum. However, it looks nothing like my word document: 1. I'm not quite sure where my tables went to. 2. My whole response is not shown. Is there any chance of me sending you my word document as an attachment and you could possibly see what the problem is? The word document is 2 pages.

I responded:

Solutions - two ideas P26. Firstly, yes you can email to me and I will post it for you. Or type a brief message in the message box saying exercise attached and then attach your word document in the attachments box below the message box that should do it too.

<div align="right">Facilitator</div>

P26 opted for the first alternative. She also felt that as Social Studies was not her specialist subject, she was at a disadvantage. She felt completely over-awed in taking part in the discussions with what she saw as vastly superior colleagues.

I really enjoy teaching Social Studies but I feel a bit 'intimidated' when I read the correspondence (models and approaches) and the fact that I know that the majority of participants in this module are Social Studies experts (this is not my specialist subject). So, when I participate in discussions I will think, "Am I saying the right thing?" or "I wonder what they think?" With F2F you can see people's facial expressions or look at their body language when comments are being made.

I have just posted Exercise 1 again. I have read ALL of the contributions made by the other participants and feel even more 'intimidated' by their wealth of Social Studies understanding and knowledge. My specialist subjects are Biology and English … Now in NZ … I am teaching Eng, L/Skills and SS and I am really enjoying the change … It's just that I am wondering what valuable contribution can I make to VEP discussions? These participants know sooooo much more. I don't want to sound silly! I know I can learn much from them and this is great. (I am not a negative person but just being realistic). So my contributions will mainly come from my teaching experience in SS and L/Skills. Is this OK?

I responded positively with:

It's more than OK, it is most welcome! Don't be intimidated. You have already made a good contribution! [Referring to a very good initial entry in Exercise 1]. It sounds to me like you are a SS natural! Great to have your thoughts and ideas in the community!

<div align="right">Facilitator</div>

However, P26's work in the module continued to be intermittent and erratic. She managed to get only three exercise entries completed, one each in Exercises 1, 3 and 4.

P22, the other participant from School B, had even more difficulty with the module. She started positively with a biography entered in the third day of the module and an Exercise 1 entry early in the following week. As in the case of P26, P22 appeared rather reluctant about being involved in an online community of practice.

> However, my observations have been that it is quite time-consuming and subject to the reliability of the network or internet connection. Personally, I find it difficult to find the time to go online, but will try my best. Another drawback I find is that it is sometimes easier to express oneself verbally, rather than in writing. I tend to be more concerned about grammatical errors and spelling than putting a point across.

P22 also, again in a similar way to P26 appeared to lack confidence in taking part in discussion due to a lack of background and experience in the subject. "As I am new to teaching Social Studies (and have not been trained for it), my discussion will be based on my 5 months experience - which might be flawed". Her entry was actually a solid and sound one. However, P22 took no further part in the module after this second exercise entry. While P26 and P22 took limited part in the online module, P25 reported that as a group the three of them were working with the material covered on the module in their classrooms.

> Regarding the many activities I posted … for Ex 4, a number of them have now been taught in class by three teachers. The students are all enthusiastic about looking at mall development in both our own communities and in the USA, as well as the establishment of big box stores. We are looking at such impacts on community values.

The entry went on to describe the strengths and weakness of the activities trialled, and plans for further values exploration work still to take place.

This case study illustrates a number of interesting aspects of the experimentation involved in the three rounds of grounded testing and development of the modules. Firstly, there is clear evidence here that while the group as a whole did not function as intended, there is was still considerable benefit derived by the somewhat imperfect

involvement of individuals and the school group. P26 and P22 are it would appear classic peripheral participants. They have, it would seem, read the module material, discussed it in their school, and used it in their classrooms to extend their teaching repertoire. However, while these largely hidden developments were occurring, only one member of the group (P25) was able to take a relatively full part in the online discussion community dimensions of the module.

This case study also shows that the online community dimension of the approach can be seen as just too difficult for individuals whose online technical skills are weak, or whose knowledge, understanding and background in the subject under discussion is limited. There is an interesting contrast between P26 and P22, teachers without a Social Studies background and without strong technical skills, and P29 (as reported in the second case study above), a young and inexperienced teacher, but one with a relatively strong Social Science background and good technical skill.

Individual and group narratives in retrospect

The case studies show that at least some individuals, at any level of experience, and in a wide variety of contexts are able to appropriate the promise and the potential of the approach and the modules. For example participant 2 and participant 29 were at the opposite end of the experience scale. Both were also working in very different contexts, one as an educational consultant, researcher and part-time tertiary teacher with considerable flexibility in her hours of work, and the other as a very busy first year teacher at a multicultural high school. Yet both were highly effective community participants and appeared to learn a great deal from their involvement in VCoP style TPDL.

However, the case studies have also shown that for a small minority of individuals the modules and approach seemed to be quite difficult. Participants 11 and 14 show different aspects of this. Participant 11 was not able to get an effective start in his module. Participant 14, on the other hand, was able to get underway, but only after a very long delay and when some face-to-face assistance with technical issues was provided. Key problems for those who were able to appropriate the benefits of the approach appear to hinge primarily on time and technology issues. A clear aversion to anything that seemed theoretical rather than practical

was also an issue for one participant. Similarly, some had a very strong preference for face-to-face interaction and discussion, and did not warm to the idea of a virtual community.

The group case studies show there are considerable advantages in people working together within a workplace, at the same time as they are engaged in a virtual community. Both of the case study groups gained benefit from the modules and from their own CoP within their own school environment. Group B was however, not able to gain all of the benefits available from such an arrangement. The main problem appears to have been the Social Studies and technical inexperience of the teachers involved. Group A on the other hand was much more successful. Key in this were: the previous experience of the group leader in an earlier module; the provision of a specific timetable meeting time, and the ability of more experienced members to encourage and cajole the less enthusiastic in the group to continue and complete.

Many of the instances reported in this chapter illustrate the key role of a facilitator. There are a large number of examples provided where very prompt responses by the facilitator solved issues before they became problems. The facilitator was of also key in providing participants with rapid feedback in order to maintain rhythm and motivation.

The case studies also show that it can be difficult categorise individuals as clearly core, active, or peripheral community members. For example while participant 2 was clearly a highly competent core group member, it is much more difficult to posit participant 29 in this category. Participant 11 was clearly peripheral, and is perhaps even less than this was an early retiree who only took part in his module for a few days at the beginning of the module. Participant 14 on the other hand was also peripheral, in that she did not take part until well into her module when almost all of her colleagues were at a totally different place in the module. However, once involved, she operated and a reasonably active level and some of her behaviour within the module could be classified as typical of a core member, had other members of the community been available to interact with her at that point. Finally these case studies show the richness, the diversity and the very wide variation of behaviour that can be observed in a VCoP-TPDL module. While the broad patterns evident in these data have been drawn out, clearly there was much more that could be said about the way individuals and groups worked during that time in the VCoP modules.

The next chapter reports on further results gained during the study. However, the focus now shifts from the action inside the modules as they unfolded, to consider the evidence available in the more reflective and retrospective focus group and reflective questionnaire data.

Chapter Seven - Reflective Narratives

Introduction

In Chapters 5 and 6 two contrasting planes of analysis (module narratives and participant narratives) were used to analyse what happened within each module VCoP. Both of these analyses were based on the data available in the online record of the modules. This chapter represents a third plane of analysis situated outside the module records. It focuses on stories emerging from the reflections of individuals and groups, after their work in the modules was completed. These stories are not told from within the 'heat of the battle' as in Chapters 5 and 6, but in a quieter and more reflective manner after the intense activity of the module work was over.

The first part of this chapter narrates the stories told by participants from each of the modules in response to a set of discussion questions in focus groups and in the open comment sections of the final questionnaire. The participants were looking back on the work they had completed while using the VCoP approach within their module. They were asked to identify strengths and weaknesses of the modules and approach, and make recommendations about what should be done to improve it in future. These data were important for the study in two ways. Firstly, the reflective focus group recommendations provided ideas for changes in subsequent modules, and were therefore a key part of the spiralling ALAR cycle used in the study. Secondly, and more importantly for this chapter, the focus group and the open ended questionnaire responses also provide valuable data in addressing the research questions of this study. These data were analysed using semantic, theme and domain analysis and the results are reported in the first part of this chapter.

The second part of the chapter, on the other hand, uses a mixed qualitative-quantitative analysis to examine the responses of a sample of participants in a final evaluative written questionnaire. In this data set responses come from a selection of people across all three modules.   As the final questionnaire included both qualitative and quantitative questions, this part of the study provides a final qualitative-quantitative take on participants' views.

Reflective data

There were two data sets that contributed reflective information after the modules had been completed. Both data sets included open-ended written responses. One set, drawn from focus group discussions, included spoken face-to-face discussion information as well. The second set was the final questionnaire data and it included only written information. Each of these two data sources is discussed separately below.

Focus groups

Following each module a sample of participants took part in post-module focus group meetings. In the first two modules (GP and VEP1) there was just one focus group while in the third (VEP2) there were two. Each group involved between four and seven participants. Two of the focus groups occurred relatively close to the end of the module, while two were held a considerable time after completion of the module. While this difference is not ideal these were the best arrangements that could be made given the busy and demanding teaching schedules of participants and researcher.

Just over half of the sample attended these meetings. The first module focus group meeting included four out of the five participants of the GP module and the VEP2 module groups included 12 of the that module's 23 participants over two meetings. The proportion attending the second module focus group was lower with four of the nine participants present.

There were two distinct phases to these meetings. In the early part each participant completed a written module reflection response sheet (refer to Appendix 2). In the second part a semi-structured focus group discussion was held, using the questions for the written module reflection as dialogue starters. Participants were also invited to develop the discourse in any direction they felt was important to truly reflect their thoughts and feelings about the module experience. The results of an analysis of the written reflection sheets and the focus group discussion transcripts are reported below.

Final questionnaire

Twenty one of the 34 individuals who took part in the modules completed and returned the final questionnaire, a 62% return. The analysis below includes data drawn from the written comments on the final questionnaire which yielded similar information to that gained from the focus groups, and it was considered best to include the open-ended written comment text from the questionnaires with the focus group data. Further detail on the nature of the final questionnaire, and the results of the quantitative analysis based on closed questions in the questionnaire is reported later in this chapter.

Analysis of focus group and open-ended questionnaire response data

The text of all written response sheets, all taped recorded focus discussions, and all written comments on the final questionnaires were reviewed and the key issues identified by domain analysis. The text was then searched to identify the frequency of key issues identified in the texts. In the initial stage of this analysis a Microsoft Word Find search identified key words and terms in the text. The terms employed in this search are listed in Appendix 3. The text surrounding each word or term identified was then read and categorised. The result of this analysis produced 31 major categories and some 175 sub-categories. At the same time each comment was classified as a clearly positive or strength comment, a clearly negative or weakness comment, or a neutral or partly positive and partly negative comment.

Some categories had a large number of sub-categories (for example 15 in the time category) while others had only two or three. The initial 31 frequently mentioned terms and issues were then re-examined to see if some categories could be regrouped to produce a smaller number of key themes for discussion. This analysis resulted in the 12 key themes as shown in Table 9.

Three themes were very prominent: community (18% of all recorded comments), knowledge (16%), and time (15%). These three together accounted for 49% of all comments. Five further themes were relatively commonly mentioned: (change 9%; reading(s) 9%; reflection 9%; activities 8%; and technology 6%). Together these five themes accounted for a further 42% of all comments. Four minor themes: facilitation (3%), commitment (3%),

trialling (2%), and grouping (1%) made up 9% of all comments.

Table 9 also shows that 474 (65%) of the 726 comments identified were classified as positive or strength comments, suggesting that participants felt more positive than negative about the modules. On the other hand, 197 comments (27%) were classified as negative or weakness comments, indicating that participants also identified areas where the approach needed further work. A further 55 comments (8%) were classified as neutral or discussed the issue in a way that indicated both strengths and weaknesses. Some these comments were particularly valuable in identifying the complexities of the way the modules and the approach were perceived and worked.

The figures in Table 9 also show a marked contrast between seven strongly positive themes and three predominantly negative themes, while one theme (technology) was finely balanced with 20 positive and 20 negative comments.

Table 9 – Key themes emerging from the focus group discussions and questionnaire Written Comments (n = 21)

Theme	Positive comments	Neutral comments	Negative comments	Total number of comments	% of all Comments
Community	100	4	25	129	18
Knowledge	109	0	7	116	16
Time	32	13	63	108	15
Change	56	1	11	68	9
Reading	24	3	40	67	9
Reflection	55	12	0	67	9
Activities	46	1	8	55	7
Technology	20	7	20	47	6
Facilitation	13	5	4	22	3
Commitment	4	8	7	19	3
Trialling	10	2	3	15	2
Grouping	3	1	9	13	2
TOTAL	**474**	**55**	**197**	**726**	**100**

Participants were very positive about the way the modules:
- developed a community of practice approach (94% of these comments were positive)

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- emphasised new strategies and approaches (84% positive)

- changed their thinking and actions (82% positive)

- included reflective thinking (82% positive)

- developed knowledge (78% positive)

These five themes are clearly seen as real strengths of the VCoP approach. The class room trialling aspect of the modules (67% of comments were positive) and the nature of the facilitation of the modules (60% positive) were also seen as strengths, albeit less so than the dominant five.

By way of contrast three aspects were seen relatively negatively:

- the way participants were grouped, (69% of comments were negative)

- the reading aspect of the approach (60% negative)

- and time (58% negative)

As mentioned earlier, participants' views on the technology aspect of the approach were evenly split with 43% of comments about technology positive and 43% negative.

The eight themes commented upon most frequently are discussed first in order of the frequency of comments made, and in some detail. The four less prominent themes are then examined more briefly. Each of these twelve themes is discussed in order to flesh out the detail and the complexity of participants' experiences of these key dimensions of the approach, using data reported in focus groups and questionnaire open-ended comments.

Community

This research is centred on a community of practice approach to professional development. As a result there was a strong emphasis on community approaches in the modules, and it is therefore not surprising to find that the community of learner and community of practice approaches were the most popular topic of discussion in the reflective written comments and discussions. The large number of comments can be categorised into three main sub-themes as show in Table 10.

The strongest theme was a strong affirmation of the value of a community of a practice approach in education with 78 positive comments to this effect. Within this participants identified six key aspects of this approach that they found to be very valuable.

Table 10 – Frequency of comments on community sub-themes

Sub-Theme	Number of comments	% of comments positive	% of comments neutral	% of comments negative
Community approach valuable	78	100	0	0
Community approach problems	26	0	12	88
Suggestions for improvements	25	88	4	8

The most commonly mentioned was the sharing of ideas and practice that flowed from the approach. In particular there were frequent mentions of how valuable it was to hear what others are doing, an aspect of quality professional development noted by Bell and Gilbert (1996). There were 11 further comments that the depth and range of craft knowledge shared through the modules was highly valuable. As one participant noted "the amount of practical knowledge out there is amazing."

Closely aligned to this was a view that the community approach drew teachers into a network of likeminded professionals that was a quick, low cost, and easy way to communicate and network with others. Another related comment was that the community of practice approach was a safe and comfortable way to discuss ideas, where participants felt: welcome and accepted; their voice was heard; they could say a lot or a little; and that they did not fear being criticized.

A further strong view here was that the feedback aspect of the community discussions was valuable. Feedback was considered encouraging, motivating and helpful, particularly when participants received a range of feedback and suggestions and when the feedback was made promptly. Feedback was seen as one of the things which held the group together. One participant noted that this also made them think about how important personal feedback

would be to students in a classroom. A final point made was the value of the community of practice emphasis on dialogue in preference to debate. This was considered a valuable idea not only in professional development, but also in the classroom.

While the comments about community were, for the most part, very positive, there were also a range of problems identified in 26 comments. The difference in the experience level of discussants, and the depth of comments posted was seen as a problem. Some felt discouraged because they felt "they could not compete" with the high level of community input of some of the strongest members. Some felt that the feedback they received was difficult to understand because those providing feedback were operating at a different level from them. Others suggested teachers only felt comfortable in the community when practical issues were on the agenda. High level discussion about theory was threatening for some.

It was felt that some members of the community let others down by not participating in the discussion often enough or quickly enough. Some felt the discussion was "too much ping-pong" and failed to get into enough depth. Others noted that the heavy emphasis on community discussion in the modules was time consuming and more time was needed to do this effectively. A number expressed the view that face-to-face discussion was still their preference. Another noted that the number of networks a teacher is expected to take part in these days is problematic, and the emphasis on community and high levels of participation expected in the modules added to this problem.

While these problem areas were identified, there were also 25 comments that make suggestions about how to improve the community aspects of the approach. One of the main suggestions made was that the facilitator could take a stronger lead in ensuring discussion entries were coming in by using more prompts. Another was if other aspects of the modules were chunked down and restructured there would be more time available to take part in community discussions. Others noted that having in-school discussion and dialogue as well as the online discussion was an extra advantage.

Knowledge

Knowledge was a prominent discussion item in the reflective discussions and was for the most part viewed positively. Participants felt they had learned a great deal of valuable new

knowledge from their experience with the modules. Table 11 shows that participants' comments were categorised in five main sub-themes. Three sub-themes stood out strongly. Firstly, many participants commented on the way in which the module enriched

Table 11 – Frequency of comments in knowledge sub-themes

Sub-Theme	Number of comments	% of comments positive	% of comments neutral	% of comments negative
Underpinning knowledge enriched	31	100	0	0
Learned a great deal and began to embed it	31	100	0	0
Teachers and students can and should learn and apply this too	28	86	0	14
Gained knowledge (and skill) in using community of learners pedagogy	19	95	0	5
Need to learn even more	5	20	0	80

their understanding of the ideas, philosophies and theories underpinning the emphasis on values and perspectives in current Social Science curricula. They reported that this knowledge enriched their understanding of values and perspectives, and gave them a new appreciation of the integral role of values and perspectives in the Geography and Social Studies teaching and learning. A number mentioned that they now had a much keener appreciation of the importance of examining the key ideologies the lie behind contrasting perspectives. They could also see how this required teachers and students to go beyond superficial viewpoints to look at the deeper issue of what shapes the values, viewpoints and perspectives of groups and individuals in society.

They also reported that they had gained a wide range of new knowledge that enabled them to begin the process of embedding values and perspective content and pedagogy in their class teaching programmes. One of the keys to this was a deeper understanding of how the process associated with values and perspectives formation and action work, and greater knowledge of practical ways to teach in this area. A number suggested that the new knowledge and understanding had broken down barriers to working with values and perspectives in the classroom, and because they now knew so much more they had greater confidence in their

classroom work.

This led a number to say they now saw values and perspectives as much more important in Social Science learning and teaching than they had seen previously and that other teachers and students should be engaging with this knowledge. A number reported that the trialling of ideas, and hearing what others were doing, had convinced them that students can - and indeed should - engage with these aspects of Social Science study much more strongly. This in turn meant that a number had begun to experiment with values and perspective teaching beyond what was asked for in the module, and they were talking with teaching colleagues about the need to change their teaching.

The final sub-theme was much less commonly expressed, but nevertheless there was an acknowledgement by a small number that while they had learned a great deal, they still felt they needed to find out even more.

Time

Time was the third of the frequently discussed themes and was perceived as a problematic aspect of the modules. In-depth analysis of the reflective data identified five sub-themes as shown in Table 12, the most frequent item related to the nature of the timing of activities and events within the modules.

Table 12 – Frequency of comments on time sub-themes

Sub-Theme	Number of comments	% Positive	% Neutral	% Negative
Time frame issues	35	14	26	60
Lack of time	32	0	9	91
Flexibility valued	20	100	0	0
Time saving/creating	14	100	0	0
Too time consuming	12	8	8	83
Start up issues	12	8	0	92

The main problems raised were that sometimes what was asked for in the modules was not easy to do *at that specific time*. For example a number noted that what they wanted to do for

their in-class trialling could not be done at the time required in the module due to existing curriculum programming. Another problem raised was the tendency for participants to get out of sync due to the flexible timeline policy. This meant that people were frequently at difference places in the module and this created difficulties in the dialogue aspects of the module. For example some people were discussing key issues while others were still doing the readings. This in turn had a negative impact on the flow of comments, replies and feedback. Some felt they were not getting sufficient timely feedback on ideas and issues because others were not getting their ideas and reactions into discussions quickly enough. Some suggested that while the asynchronous discussion framework provided valuable flexibility, it would be good idea to have some synchronous discussion at selected points in the module as well to heighten the ability to discuss ideas and get instant feedback.

Another item raised frequently was a lack of time to take part in such an intensive form of professional development. For the most part participants did not blame the modules (or the approach) for this, but noted that the busy, fractured and pressured nature of teaching made it very difficult to find time to fit in module work. A number suggested that schools need to do more to create space for teachers to do professional development of the type modelled in this research. Indeed some individuals had applied for and were granted time release. In the School A group in Chapter 6, the department head scheduled a weekly staff meeting devoted to the module.

While time appears as one of the three problematic elements of the approach in Table 11 some aspects related to time were seen as strengths by some individuals. One was the time flexibility offered by the approach. Participants were generally positive about the way the module work could be done in one's own time, at points in the day or week that suited people's busy work and family schedules. Some were also appreciative of the flexible timelines available, for example the provision of catch up time during the holidays, although others saw this as problematic for discussion and feedback. Another time strength identified was the fact that all material associated with the modules was always available online and readily accessible over a full 10 – 15 week time block. Retrospective checking was possible over the life of the module.

There was a second key positive time issue related to the ongoing nature of the VCoP approach. A number noted the modules made the professional development experience more

valuable by saving time and indeed creating time. Some participants saw that the modules saved them time as they did not need to go out and search out relevant professional reading and support materials because the module did that for them. Others, especially those from remote regions, felt they saved a good deal of time (and expense) by not wasting time travelling long distances to and from a metropolitan professional development venue. Others observed that the module created a time of focused thinking, discussion and reflection. Some felt they did not often get round to the type of reflective and critical thinking available through the modules, and the fact that they were committed to regular professional development time over a period of 8 to 14 weeks (depending on their module) actually ensured they did create time for in-depth professional development.

On the other hand a number considered that the modules, as they were structured, were just too time-consuming and that they could be chunked down in order to help address the time problem. Those who suggested this felt that various aspects of the modules such as the readings and the exercises could be cut down. In a slimmed down form they could still raise key issues but in a less time consuming way. Others suggested that the modules were too multifaceted and complex; again meaning they took a lot of time to complete. They felt there was a need to streamline and simplify.

A final timing issue concerned the starting the modules. One of the main concerns was that starting the modules was difficult, and some felt more should be done to help people get into the modules. There was a lot of reading to do, finding one's way around the online site and getting used to new technology. Some suggested that a face-to-face session to work through some of these issues was needed. As reported elsewhere this was possible on some occasions, but for some there was a lot of individual problem solving to do at the beginning. Others suggested more structured activities at the start to introduce participants to aspects of the site and ways to take part in online discussions. It was further suggested that more practical activities rather than too much theory at the outset would also help.

Change

While change is not a key dimension of the VCoP approach as set out in Figure 3, the approach does hope to provoke change. It is then interesting to see that change was the fourth most popular topic in the reflective data. Table 13 shows detail on the nature of comments on

five ways in which teachers felt their views and practice had changed.

Some felt their pedagogy had changed, others mention new activities and strategies they had adopted, and yet others spoke of an increased confidence in working in the values and perspectives area. Some of the interesting comments made here included: "I have upped the ante in values with students", meaning the teacher was now including more values work in their teaching, and expecting students to be able to discuss and write about values in a more

Table 13 Frequency of comments in change sub-themes

Sub-Theme	Number of comments	% of comments positive	% of comments neutral	% of comments negative
Changes in practice	30	100	0	0
Changes in awareness of a need for change	15	100	0	0
Support for a community approach as a means of making change	8	100	0	0
Barriers to and support for change	15	20	7	73

sophisticated way. "I am now encouraging teachers to do more to challenge and develop student thinking"; "I am now less politically correct and more honest about values"; we have "re-vamped our junior Social Studies programme to include more values and perspectives"; "I have used the diagrams and models (from the module) in my teaching"; "I am experimenting with ways of operating a more democratic classroom". Others commented that they were using more conversation, discussion and debate with students and listening to them more. Clearly these comments indicate that classroom practice shifted and changed.

Further comments indicated changes in thinking and attitude that could produce change in the future. A number mentioned they had reached a new understanding of the role they could take in working with values and beliefs in the classroom, a theme explored in the values module. Others mentioned that they now considered that teachers need to be aware of the origin of values and of assumptions behind view points and perspectives, and to teach students about this more directly. In other words they were suggesting teachers need to be

doing more to foster critical thinking and to explore values and perspectives in greater depth.

In two quite focused comments one teacher suggested, "teachers need opportunities to discuss like in this approach" while another noted that experience in the module had, "made me think and act more on the 'so what' aspect of Social Studies", another concept examined in the values and perspectives module.

Another sub-theme related to the barriers to change along the lines encouraged in module. The values and perspectives areas were seen as difficult to teach due to their complexity. Some felt there teachers were reluctant to teach values and perspectives because national exams do not ask questions about them. Some also felt teachers come to theory and discussion only slowly, and so the type of TPDL advocated in this model might not work as well as hoped when tried more widely.

Reflection

Reflective thinking is another key element of the VCoP approach. There was a good deal of discussion about this dimension of the approach in the reflective data and it was highly positive. Indeed, there was not one negative comment made about reflective thinking, with 82% of the comments rated positive and 18% neutral. There were four distinctive sub-themes in the comments as shown in Table 14. Participants suggested reflective thinking was a positive aspect of the modules because it required that people to think more actively and this extended thinking. Participants considered this as one of the important elements in making the VCoP approach a valuable form of professional development. A number mentioned that it was particularly good to have the opportunity to reflect on the entries of others. Others considered that experience with reflective thinking had been influential in changing their practice.

Participants suggested that the VCoP approach encouraged, and indeed enabled more critical thinking, and that this challenged them to think more deeply about the role of critical pedagogy in their own work as a teacher. As in some of the other themes a number commented on the need for teacher and students to become more aware of underlying assumptions and ideological origins of values and perspectives. Some noted that the VCoP form of professional development provided time to do this. A number of comments focused

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Table 14: Frequency of comments in reflection sub-themes

Sub-Theme	Number of comments	% of comments positive	% of comments neutral	% of comments negative
Highly valuable activity	24	100	0	0
CoP enables quality reflection	21	95	5	0
Critically reflective thinking is key to values and perspectives	9	100	0	0
Problematic aspects	13	15	85	0

on the way in which experience in the modules had resulting in new appreciation of how the values exploration and perspectives aspects of Geography and Social Studies required teachers and students to develop critically reflective thinking skills. It was suggested that teachers need to develop their critical, reflective, and philosophical thinking through quality professional development, and then re-think and reshape their pedagogy accordingly.

The final sub-theme identified that there were problems with this aspect of the approach. Comments suggested that the reflective thinking aspect of the modules could be quite overwhelming and challenging, and that it was a time consuming aspect of the approach and there was a need to create extra time in order to do this aspect of approach effectively. Some suggested that classroom release time was needed to do this form of professional development properly.

Activities

Key outcomes that teachers usually look for in professional development are activities and strategies they are able to adopt or adapt for use in the classroom. The modules were seen as very valuable in this regard, with more than 80% of the comments on activities being positive. The three sub-themes evident in data are displayed in Table 15.

Predominantly, participants talked about the value of the wide range of activities and strategies they gained from their participation in the module and a number of teachers reported they had been able to implement some of these in their classrooms. Participants made particular mention of greater use of: questioning and discussion activities;

Table 15: Frequency of comments in activities sub-themes

Sub-Theme	Number of comments	% Positive	% Neutral	% Negative	
Greater range to use	33	100	0	0	
Have been able to implement	11	91	9	0	
Have a file of these	10	70	30	0	

using role play and dialogue to explore values and perspectives in greater depth, and placing more focus on values in current events and local issues. Participants were so satisfied with the number, the range and the quality of activities and strategies presented, shared and trialled in the modules, that 10 suggested that a file of the activities should be drawn together and made available to teachers.

Reading

The reading aspect of the approach drew criticism with 60% of the comments made expressing negative opinions. Comments suggested participants felt the readings were too difficult, too academic and too demanding. There were also complaints that the readings were too long and too repetitive. A few comments suggested that some discussion entries were also too academic and too challenging. In a follow up from this other comments suggested ways in which the reading component could be improved. These focused on breaking down the readings into a more manageable and more economical form. Most appreciated the readings were a key part of the approach but some felt they could be better presented.

Table 16: Frequency of comments in reading sub-themes

Sub-Theme	Number of comments	% of comment positive	% of comments neutral	% of comments negative
Too difficult	33	9	6	85
Very helpful	21	100	0	0
Need to be modified	9	0	0	100
Need in hardcopy	4	0	25	75

In contrast to the negativity indicated in many of the comments on readings, there were 21

comments that were very complimentary about the reading component. These participants noted that it was good to have mediated readings available in your own home. They felt that while the readings were challenging, this was good as it stimulated thinking and improved theoretical understanding. Some reported that they enjoyed the intellectual challenge of getting back to readings after some time away from engagement with academic reading. The balance of the readings was appreciated. One participant commented that the readings, and indeed the whole approach, "challenge how we do professional development".

Technology

The technology aspects of the approach, like the readings, were controversial. There was an even split between positive and negative comments. This contrast is reflected in Table 17. While 15 fully positive comments suggested the technology aspects of the modules were very good, 12 comments (92% of them negative) expressed the view that the technology component provided difficulties. Between these two extremes 14 comments suggesting

Table 17: Frequency of comments in technology sub-themes

Sub-Theme	Number of comments	% Positive	% Neutral	% Negative
Technology aspects good	15	100	0	0
Technology aspects difficult/problematic	12	0	8	92
Good potential but improvements needed	14	29	21	50
Still a role for face-to-face	5	0	40	60

improvements were evenly balanced with 50% negative in tone, 29% positive and 21% neutral. Five comments suggested that while there was a place for technology in professional development there was still an important role for face-to-face work as well.

The aspects of the technology dimension that were viewed positively included the permanent nature of an online component as it remains in place and accessible over time allowing participants to refer back. Other comments noted that working online was helpful in stimulating ideas about ways to develop online learning with students as well. Positive

comment about the structure and layout of the online site included compliments on its easy to read nature, comprehensiveness and helpfulness. The online activities and exercises were also thought to be good, particularly when they involved people reporting on what they do in their classroom and what they subsequently tried in the classroom from the ideas suggested in the module.

This completes the discussion of the eight dominant themes in the reflective comment data. The next four themes were much less prominent and the range of data was much smaller, not justifying the use of tables. However, some important points were made and these are now discussed in brief.

Facilitation

There are suggestions in literature that community facilitation and leadership is a key element in quality communities of practice. Indeed, I discuss this aspect of the study in some detail throughout this thesis. However, participants were remarkably quiet on this issue in the reflective comments data. The fact that I was both the facilitator and the researcher may well have created a barrier to full and frank discussion of this issue. Nevertheless some individuals offered valuable opinions and insights on the facilitation element of the approach. Three main ideas emerged. In the first sub-theme a number of comments intimated that participants thought the facilitation had been skilful and helpful. Specific comments noted the facilitator was: "very encouraging"; "supportive"; "communicated well"; "readily available" and that the facilitation was "balanced".

In a second group of comments it was noted that energetic facilitation is required to make the approach work effectively and that the role of facilitator is a difficult and delicate one. A number commented that facilitator feedback to individuals and the group as a whole was vital to the health of a VCoP community.

Third, and in a more critical vein, some participants suggested that the facilitator needed to be more authoritarian to make sure that people fulfilled the timelines and the requirement of the modules properly. Another commented that a face-to-face session with the facilitator at the start of a module would be a great help in getting people well briefed, and would also establish a quality relationship with participants.

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Commitment

Commitment was another issue that emerged from the reflective comments. Again this was an area of some controversy. Some people were of the opinion that strong and regular commitment was required to make a CoP work. Others felt that the way people make a commitment is a more flexible thing, and people need to able to contribute when and as they can. The former were critical of those who did not contribute regularly and at some depth. They were also of the opinion that the facilitator should do more to manage this aspect of modules. Others pointed out that deep and very regular commitment was often very difficult for busy classroom teachers, especially those doing the modules as single isolated individuals. Some noted that the modules were a good idea because they did not require the level of commitment that a university paper would, and yet they were a great help in achieving a more in-depth form of professional development than one or two day block courses and workshops.

Some raised questions about the fact that the approach required teachers to commit a lot of time over and above their contractual requirements as a teacher, and that release time was necessary if people were making this type of commitment. Others noted that they took part in the module as a personal-professional commitment rather than as a teacher-contractor, and they were not concerned about working 'over and above' to develop their professional knowledge and capabilities in new and important areas of their subject.

There were various suggestions made about how to improve the commitment issue: some face-to-face sessions; some synchronous discussion; providing release time and forming in-school discussion groups alongside online VCoPs were suggested.

Trials

Clearly the practical aspects of the approach were seen as important by participants. Thus the trialling of new activities and strategies in the classroom could be expected to be a valued part of the approach. However, this was another area rarely mentioned in the open ended comments. A number suggested that it was a very helpful thing to do. Some suggested this aspect would be assisted if a hard copy booklet of ideas to try was provided. However, others noted it was very time consuming and "another thing to fit in", and again that this was

difficult to do due to other teaching priorities.

Grouping

Grouping was raised as an issue on just a few occasions. The size and type of groups used in the VCoP approach was not featured in visual diagrams of the process. However it was raised a number of times in focus groups and other feedback in the first two modules. In a grounded and ALAR manner different means of grouping participants were experimented with in the third module. The key points in the reflective discussion on this issue suggested that: the size and nature of groups was important; groups of 8-10 were considered best in online discussions; buddies were a good idea, but only when the buddies were compatible in terms of levels of experience and commitment.

Some noted that both smaller groups and the whole group were important in an online module. It was noted that while small groups were good for discussion, it was also important to have access to the whole module discussion beyond your own grouping in order to be able to see and hear of the full range of ideas being discussed and the activities and ideas being suggested and tested.

Again, as in some other areas, various suggestions about the value of some face-to-face meeting time, and stronger facilitator direction and intervention in making groups work, were made.

Quantitative analysis of questionnaire data

As a result of issues raised in the operation of the modules themselves and in focus group discussions a final evaluative questionnaire was devised and sent out to all participants. The questionnaire focused more directly on some of the issues raised during the research process using multi-choice and Likert scale questions. However, there were also open-ended questions to provide opportunities to raise any issue for comment. The open-ended data were included in the domain analysis above. The quantitative multi choice and Likert scale data are examined in this section. Appendix 4 is a copy of the questionnaire.

The questionnaire sample

Twenty-one of the 34 individuals who participated in the study completed the final questionnaire. Table 18 shows that 13 of those who completed the questionnaire had completed all exercises in their respective modules. A further six had completed a number of exercises but not all of them. A further two had been into the site and looked around and read material, but did not complete any exercises.

Table 18 - Module status of questionnaire respondents (n = 21)

Gained entry to the site and looked around	1	
Entered and read material but did not attempt exercises	1	
Entered regularly and completed a number of exercises	6	
Completed all exercises	13	
Total	21	

Thus the sample for the questionnaire comprises a majority of those who completed all modules and remained in the modules until the end, or those who completed a good number of exercises and were regular participants through most of their module(s). The questionnaire itself focussed on participants' views on three aspects of the module experience: barriers to participation; the degree to which the approach had influenced them, and their overall judgment of the value of the approach.

Barriers to participation

The initial set of questions explored the factors influence engagement in the module(s) that were particularly difficult or challenging. The intention of these questions was to probe the extent to which individuals felt restricted or hindered by various difficulties identified in the module narratives (Chapter 5), the individual and group narratives (Chapter 6), and in the focus group data reported in the first part of this chapter. The six items probed through this first bank of questions were: technical issues; the time required to complete modules; the level of difficulty of module materials and exercises; the demands of time from workload and personal life; the length of exercise and discussion entries; the depth and vibrancy of discussion. The response to each of these is discussed separately below.

The first question in the barrier and difficulty set asked about the extent to which technical issues and problems in gaining access to, and working within, the ClassForum site created difficulties for participants. The responses suggested that for most respondents there were few technical issues. For 13 of the 21 respondents technical issues did not hinder then at all, or only very little. On the other hand for four individuals there were some difficulties and challenges and for two "a great deal". This data confirms the split in views about technology and technical issues evident in the focus group data but, is slightly more positive on this issue than data presented earlier.

It appears that most participants were able to work with the ClassForum tutorial software platform relatively easily. However, there were problems for some.

At times I got frustrated with the technology. I went through the how to use (material), but still didn't have all the answers and often went round in circles.

I found moving around the dialogues quite clumsy at times and again frustrating - enough sometimes to put me off competing the work I was doing that night - especially if I lost what I was doing!

Time and workload issues on the other hand, were a major problem for most participants. Some participants in focus groups said that that the modules were "too time consuming" and needed to be reduced. The first question posed in the final questionnaire on this issue asked participants to quantify the extent to which the time required to complete the modules made it difficult and/or challenging to complete them. The time taken to complete modules was an issue for 18 of the 21 respondents and of these 10 said that the time required by modules effected their ability to take part "quite a lot", or "a great deal".

In a related question participants were asked to quantify the extent to which the heavy demands on their own time from work and personal life made it difficult and/or challenging to take part. Time, considered from this point of view, was an even greater barrier to participation. One respondent reported:

I did not have enough time to participate. I found it quite difficult to sit down and focus on very detailed and specific aspects of teaching prior to, or after, a day of teaching.

All 21 participants reported that heavy demands on their own time, from workload and personal life, created difficulties. For 11, workload and personal life demands created "quite a lot" or a "great deal" of difficulty for them in completing the modules, and for a further 10 this affected them "to some extent". None of the respondents rated this factor as having no or very little effect on their ability to complete.

However, another key factor in module participation, as evident in earlier data, was the complexity and difficulty of module readings, notes and exercises. Again some participants suggested that this aspect of modules also needed to be trimmed and broken down. While about a quarter of respondents (7) reported the complexity and difficulty of module readings, notes and exercises did provide "quite a lot" of difficulties and/or challenges for them, 13 said it was not an issue at all, or had "very little" affected on their ability to participate. Another three gave a moderate "to some extent" rating. It would appear, taking into account data presented elsewhere in this study, that for a minority of less experienced and less confident participants the difficulty issue was a barrier.

The quality of feedback and discussion within the modules had also emerged as an issue in Chapters 5 and 6. The final questionnaire probed this further by asking two questions. The first question probed the extent to which the long and involved nature of some of the entries was a barrier. In a second, respondents were asked about the extent to which "irregular, shallow and stilted" discussion and a relative lack of "lively online discussion with lots of people participating" was seen as a barrier to participation. The results showed lengthy and complex contributions by some participants was an issue for 11 of the respondents. On other hand for nine it was not an issue at all, or only to a relatively small degree. This response indicates a clear split in views on the extent to which the longer and more involved entries were a detractor.

In the answers to the second question, just under two thirds of the respondents (13) saw the quality of discussion as lower than they had expected or wanted, and this was seen as something which made it difficult to participate. On the other hand the other third (7) did not see this as an issue. It appears likely from the range of evidence presented in this study that a

minority of participants may have been looking for a lower level kind of professional development experience.

Influence of the modules on teachers

It is clear from evidence presented elsewhere in this study that the modules (the approach in action) had an effect on participants in a number of ways. It introduced participants to new ideas and new teaching strategies. A number of participants, both in their work in the modules and in the views expressed in the reflective data, suggested this had affected their thinking and changed their practice. In the final questionnaire three questions were posed asking respondents to quantify the extent to which their thinking and practice had been influenced by their VCoP experience. In particular they were asked to rate the extent to which module work had influenced them in the weeks and months *following* their completion of the module. Thus the thrust of this a question was to the extent to which participants considered their ongoing thinking and classroom practice had changed over a period of time. The results are shown in Table 19.

Table 19: Extent to which the modules had influenced participants (n=21)

Extent of Influence on	Thinking about values and perspectives	Thinking about activities and strategies	Classroom practice
None	0	0	0
Very little	1	1	2
Some	10	9	9
Quite a lot	6	7	7
A great deal	2	2	0
No reply	2	2	3

The first of these questions focused on the extent to which the module experience had influenced the way they thought about the perspectives and values exploration aspects of their learning area (Geography or Social Studies). Respondents suggested that the approach

continued to have an effect on their thinking. For one participant this was a modest "very little", but for a further nine it was a more positive "to some extent". For seven others the influence was a much stronger "quite a lot" or "a great deal". It needs to be noted that four of the 21 respondents did not answer this particular question. Respondents were also asked to rate "the extent to which the module has influenced your thinking about teaching strategies and learning activities". The pattern of reply was very similar, with one saying "very little", nine "to some extent", six "quite a lot" and one "a great deal". Perhaps the most important question was, "the extent to which to module has influenced your classroom practice". Thirteen said "to some extent" or "quite a lot", for two respondents the influence had been "very little" and three did not answer.

The results of the three questions regarding the extent of influence in the weeks and months following engagement in the module are relatively positive. While this data is self reported and has not been verified by classroom observation, the trend appears a clear and is similar to the module narrative and reflective discussion data. It would therefore appear that the VCoP approach to TPDL has been more influential on teacher thinking and action than that achieved in short course professional development as reported by Lee (2000) and Kwakman (2003).

The questionnaire included, as question nine, a request that participants provide a copy of one or two class room activities; or modifications to a teaching unit; or new units developed; or any other items that they felt illustrated some of the ways in which they had changed aspects of their teaching practice as a result (or partly as a result of) their participation in the online modules. However, only three items were returned, and these from just two of the 21 questionnaire respondents.

Teacher participant evaluation of the approach

As part of the focus group activities participants were asked to make brief written comments about how they rated the VCoP approach to professional development as compared with other forms of TPDL they had experienced. Twenty-four participants made comments and these were examined in the same way as the other open-ended reflective responses outlined earlier in this chapter. The response to this overall judgment invitation is displayed in Table 20.

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Clearly, those who ventured an opinion here were predominantly supportive of this style of professional development. Fourteen of the comments were very positive and even those who had reservations pitched these in a neutral way and were not negative about the approach. Those who were particularly positive about the experience focused on the fact that they felt the read, discuss, develop, trial and report back method used in this approach was highly valuable.

Table 20: Overall judgement in comparison to other forms of TPDL (n=24)

Sub-Theme	Number of responses
A very good approach	14
A good approach, but there are issues	9
Not a good approach	1

As one respondent said, "there is no better way to learn". Another focused on the highly supportive nature of the VCoP approach and in particular that "every little contribution is seen as valuable". Others described the ongoing and reflective nature of this form of TPDL as being particularly valuable. Again the flexibility of the approach was mentioned. It is "better because you can do it when and where you want". Another concluded this was a valuable addition to TPDL offerings as it was not as expensive as university paper for credit, but a lot better than short term TPDL.

These who saw the method as having potential but needing improvement were mainly of the view that there needed to be some face-to-face block time. In other words, a VCoP offers a lot, but it would be even better if a mixed media approach was used. That is, some online asynchronous work but also some synchronous work and some face-to-face time as well. The one counter view noted that a "short term (two days) is better for me".

One participant seemed to sum up the way that the approach affected the more engaged participants by noting:

It's a strange thing, you don't realise it's actually happened. When I went through the module it made me reflect on the teaching practice that [I] presently [had], and one thing

that I've noticed in the last term after [doing the module], is most of my teaching is now very strongly teaching through the values process. I can actually feel myself doing that in front of the classroom. A number of my [students] said to me 'gosh [in] all the essays you want for us to write about … different people's values and perceptions!' Well yes. I mean that just happened to be the topics that we finished on, so they felt that it was quite a strong focus. But I have personally felt in my actual teaching, as well [as it] being more of a conscious thought, I guess [there is a] desire. I want to actually work through that medium or that process [now].

<div align="right">Participant 37</div>

Conclusion

The results reported in this chapter confirm a number of the findings of the previous two chapters and in particular the major finding of Chapter 6 that the modules and the VCoP approach appear to be an effective means of delivering in-depth professional development for most teachers. The results of the focus groups and the final questionnaire provide evidence of a high satisfaction from more than three quarters of the participants on five themes that measure quality. The modules were highly regarded in terms of the new strategies and approaches for the classroom suggested and the in overall knowledge participants gained from them. Participants felt that their thinking about teaching and their teaching actions in the classroom had changed as a result of the module experience. In particular they felt that the reflective thinking engendered and community of practice pedagogy caused them to review their own teaching and learning. All of this indicated that the module approach had a positive impact on the way the teachers learned and altered their teaching practice.

On the other hand around a third of the participants found the modules quite difficult, and even those who were positive about the module approach found some aspects needed improvement. Three aspects stood out as requiring improvement: the complexity and level of difficulty of readings and module exercises, a range of time related issues, and the way in which participants were grouped.

This chapter does, however, goes well beyond merely reinforcing earlier findings. The rich range of data provided in the focus groups and the questionnaire goes much deeper and provides detail about some of the subtle reasons for the successes and the failures experienced over the three modules. Even in aspects of the modules where there was

overwhelming satisfaction, the detailed sub-theme data in this chapter are fine grained enough to identify aspects of dissatisfaction and calls for improvement. Similarly, some aspects of the modules and the approach, for example the technology, emerge from this chapter as contentious, with around half thinking this aspect was fine and the other half seeing it as problematic. Again, the detail provided in this chapter provides the reasons for the variation in opinion.

Thus this chapter shows that there is a complex mix of internal relational, procedural and technical factors in play when developing an effective VCoP approach to TPDL. There is also a range of wider contextual influences impacting on teachers' lives and work that can make it difficult for them take full advantage of the approach. These are not the fault of the approach itself, but further work on refining the approach is needed to take these influences into account. This chapter has built on and deepened the analysis of the Chapters 5 and 6. It also leads naturally to the next chapter which looks across the key findings from all three results chapters and discusses these in relation to the approach and the literature as reviewed in Chapters 2 and 4.

Chapter Eight – Discussion

Introduction

This chapter discusses the findings outlined in Chapters 5-7 from three contrasting perspectives. First, discussion focuses on four 'headline' findings that emerge consistently throughout these chapters. Second, the virtual community of practice approach (VCoP) to teacher professional development and learning (TPDL) is explored in relation to the seven key dimensions of quality VCoP for TPDL identified in Chapter 2. The third part of the chapter reviews the key research questions for this study in light of the findings. The chapter concludes by drawing some common threads from the three earlier sections.

Four major findings

The study set out to investigate the potential of a meso-scale VCoP approach to deliver 'strong' TPDL; that is, TPDL that engages with the underpinning reasons, purposes, and assumptions embedded in changes in curriculum direction, as well as with teachers' personal assumptions and beliefs about what it means to teach their specialist subject well (Bell & Gilbert, 1996). The results reported in Chapters 5-7 suggest that if a meso-scale VCoP approach to TPDL is to be successful, three key issues need to be addressed. These are manageability, catering for individual difference, and establishing a strong discussion and dialogue culture. The fourth major finding is that participants' evaluation of the approach was predominantly positive, but also identified areas needing further development.

The importance of manageability in teacher VCoPs for TPDL

Chapter 5 results show that the approach resulted in a degree of success in all modules. Grounded ALAR analysis and reflection produced refinements that resulted in each subsequent module being more successful than the one before, as measured by the engagement of participants through all stages of modules and the quality of the text submitted within the modules. These improvements appear to be related to two critical manageability factors: the timeline for completing modules which was progressively extended; and the number of entries required in each online exercise which was reduced from three to two. These two changes seem to have made the approach more manageable for busy teachers, and

helped them cope with the modules and remain active in them for longer. The increased time and the reduced entry requirements also appear to have resulted in a marked improvement in the quality of professional discussion in the later modules. While improvements in other factors probably also contributed to the progressive improvements over the three module rounds, the manageability factor appears to have been particularly important.

The pressure of time, and commitment to a range of complex people-focused tasks faced by teachers, emerged as one of the most problematic aspects of CoPs for the participants in this study. Workload and time stand out in the Chapter 7 results as two major concerns for participants. Time was the third strongest theme in the analysis of focus group and questionnaire comments and attracted the highest number of negative comments. Modules were often seen as too time consuming and needing to be chunked down. In saying this, participants appeared to be suggesting two things. First, they felt there was some unnecessary repetition in the readings that could be removed, reducing the volume of the reading. Second, some suggested that the readings were, at times, too complex and too long. In asking for chunking down these participants appeared to be requesting that I simplify and edit down to produce a more teacher friendly version of the readings. The first would be easily achieved and would be a worthwhile improvement. The second is more problematic.

To heavily edit an author's work in this way would run the risk of distorting key aspects of the argument and thereby reduce the authenticity and value of the reading. I would be reluctant to do this. In addition the opinion of participants was divided on this point. Some participants appreciated the readings as providing a level of thinking and challenge they saw as rare in their TPDL experience, so it was a refreshing and valuable change for them. Further, in running a TPDL module which issued a certificate of achievement that teachers could use in appraisal and on their CVs, a professional level of rigour and credibility was necessary. Thus while I agree that some reduction of repetitive and unnecessary material would be a good idea, I would not simplify readings just in order to make the modules easier for teachers.

The nature of teachers' work places them under particular time and workload pressures. Teachers have multiple roles and are asked to work with a wide range of people in a number of different contexts (Eacute & Esteve, 2000; Rosenblatt, 2001; Bartlett, 2004). These often include subject *teacher* (of different subjects and class levels); subject *assessor/examiner* (of

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different subjects and class levels); form teacher or dean (often similar to *social worker*); extra and co-curricula coaching and organizing (*sports coach or artistic director*), responsibility for playground and bus supervision (*management*) and so on. Some are also expected to carry professional leadership roles as a subject or departmental leader. Consequently the opportunity to go in-depth on one small aspect of their work (such as a specific issue on one aspect of one of their teaching subjects) is a difficult thing to fit in and do well.

Secondary teachers also work within unusual time blocks. Their work is concentrated into four relatively short time periods within a year (school terms), each of approximately 10 weeks. The first part of each term involves intensive setting up work with new students and starting new topics. The last part of each term is dominated with activities such as assessment, completing topics, student assessments and report writing. There are numerous studies that report that these demands and constraints mean high teacher workload and stress levels (Johnstone, 1993; Price Waterhouse Coopers, 2001; Invargson et al., 2005). For example, the 2005 New Zealand Post Primary Teachers Association (PPTA) teacher workload survey reported that 57% of middle managers thought their workload was unmanageable, and 71% felt they could not do what they needed to do in a reasonable time. About half of the teachers (48%) felt their workload was unmanageable, and 73% felt they could not do what they needed to do in a reasonable time. In this study in spite of the attempts made to make the module manageable, time and workload issues were still a problem for many participants.

Research literature referred to above, and findings in this study, suggest creating time for extra on-going TPDL work in a VCoP is very difficult. Clearly, manageability is a major issue relating to VCoPs for teachers. There is recognition in the research literature that CoPs have not been as successful in education as in other fields (Watson, 2001; Haydon & Barton, 2007). I would suggest that the range and intensity of demands faced by business-based knowledge workers is less than that experienced by teachers. For example, recent Labour Department research reports that a higher percentage of those working in schools work long hours (50+ hours per week) in comparison to workers in business fields such as finance, insurance and administration (Fursman, 2008). The range of roles expected of workers in business and industry is often narrower, and workflows more distributed. Consequently

business-based VCoP participants are likely to be able to go into greater depth in their thinking about a relatively narrow field of work, and in a more focused way, than teachers.

Further, technology education researchers have also reported lower use of all forms of ICT by teachers than in business and industry (Watson, 2001; Haydon & Barton, 2007). While there is recognition that time and work pressure factors are implicated in this, other factors are also raised. Some suggest that teachers distrust, are frightened of, and/or do not enjoy using ICT. They also report that teachers expressed high levels of frustration about lack of access, unreliable equipment, and lack of training (Williams, Coles, Wilson, Richardson & Tuson, 2000; Morris, 2003; Savidan, 2003). Others suggest that teachers make choices about the adoption and use of new technology on the basis of their beliefs about teaching. Thus while some consider ICT provides interesting and exciting opportunities to reinforce and/or extend their teaching repertoire, others believe ICT does not offer them any significant improvements in pedagogy or teaching approaches. The former are likely to readily adopt ICT approaches and the latter choose not to adopt (Veen, 1993; Mumtaz, 2000). Other research has also reported that the relatively low levels of ICT comfort, confidence and use by many teachers have consistently thwarted the hopes of educational policy makers and reformers for increasing teachers' use of ICT (Hennessy, Ruthven & Brindle, 2005).

Given these difficulties, in-depth and ongoing VCoP-TPDL for teachers needs to be as streamlined and straight-forward as possible. If it is not, teachers will resist adoption on the basis of skill level and time availability. Similarly, if it is too complex, difficult to understand, or difficult to participate in, those with cynical and/or negative attitudes will have their views confirmed and quickly give up. On the other hand, investing sufficient time and effort to go in depth and over a longer timeframe are clearly important in achieving quality TPDL. Thus, making VCoPs in-depth and ongoing, yet manageable, is vital in any attempt to introduce teachers to VCoP based TPDL. This is a difficult balancing act. The findings suggest that changes and modifications in order to improve the manageability factor did help, and resulted in a steady improvement over the three modules in this study. However, participants still noted aspects which needed further improvement, in their view.

Respecting individual, group and context differences

A second major finding was that there were wide differences in the way individuals and groups of participants engaged with and worked in modules, and that VCoPs for TPDL need to be flexible. Wenger and his colleagues note that there are typically three different types of participants, ranging from core, to active, to peripheral (Wenger & Lave, 1991; Wenger, 1998; Wenger et al., 2002). This study found clear differences in patterns of participation that reflected this three-way division. Wenger et al. note that typically CoPs comprise 10-15% core group members, another 15-20% are active and the remaining 65-75% are peripheral (Wenger et al., 2002, p 56-75). In this study the active group was much larger and the peripheral group much smaller. For example in the third module, five of 23 were core members, 11 were active and just seven were peripheral. While these three participant types are accepted as natural and legitimate in many large scale CoPs operating over long life cycles, high levels of peripheral participants are problematic in a meso-scale teacher professional development context. The approach in many CoPs reported in research literature seems to be much more permissive than in this study. The aim in this study was to make good use of limited time and to be as effective as possible with as many participants as possible.

This study has found that the way individual teacher VCoP members participate, and the level of CoP sophistication they achieve, varies considerably from individual to individual, and from group to group. Core members tended to be national and regional subject leaders, although there were exceptions to this. Indeed, one core members in VEP2 was a first year teacher. Busy Heads of Departments and Faculties tended to be more peripheral, although again there were exceptions. Busy middle managers often carry a very high work load, and in a number of instances in this study they appeared to find it harder to make time for regular CoP participation and often failed to become active CoP members. Those less comfortable with technology also found that the time needed to sort out practical technical issues was discouraging, and contributed to their peripheral position in modules. Interestingly, this pattern of participation differed from the concept of legitimate peripheral participation outlined by Lave & Wenger (1991). While some of the peripheral members in this study were inexperienced teachers tentatively working their way into the Social Science education community in the way suggested by Lave and Wenger (1991) and Wenger et al. (2002) others were well established teachers who, it appeared, were unable to find enough time to be more

actively involved. This again emphasises the importance of manageability in teacher oriented VCoPs.

The findings also verify literature assertions that peripheral members can still benefit considerably from the approach in spite of their marginal position. However, the core and the more active in this study tended to be those who were prompt in their responses and engaged in collegial discussion at the same time as most other members of the group. The less active and the peripheral, on the other hand, tended to operate to a different timeline and were thus not engaged in the modules at the same time as most of their colleagues.   In a teacher professional development context, core members and active members are both acceptable, but less active and peripheral members can be seen as problematic. The opinions and reflections in Chapter 7 show the core and more active participants on the one hand, and the less active and peripheral members on the other have quite different views about key aspects of the approach and behave differently within it. For example, there is a clear contrast between those who took part in the modules within the planned timeline, and those who used the flexibility available in this approach to complete their participation over a much longer time period. Findings show the prompt participants wanted the facilitator to be tougher on maintaining deadlines, while the come-lately participants praised the facilitator's flexibility and tolerance. In this study I decided to be flexible rather than insist on unbending adherence to rules and guidelines. While this assisted the more peripheral members, it appears it did not maximise potential benefits for the some of the more active members, or for the community as a whole.

The normal expectation in a teacher professional development programme is that all participants will complete activities at the same time. The time-flexible VCoP approach broke from this expectation and enabled variable completion times, but as shown above, this caused frustration and problems for some. This finding suggests that options to resolve this tension are needed. This could be as simple as making it clear at the outset that there are legitimately different roles and pathways within modules. Or it may mean that boutique modules tailored to specific clientele are needed.

There were also differences in teacher responses to exercises. Core and more active participants tended to write longer and more complex exercise entries, while less active and peripheral members produced shorter and simpler ones. While these differences are

acceptable within the inclusive and open philosophy of CoPs, findings show this can be problematic in a teacher professional development context. The high powered contributions of some individuals tended to create feelings of insecurity, inadequacy and self-doubt in some of the less confident and less active members of modules. This strong contrast in approach and behaviour needs to be sensitively managed in order to prevent serious damage to the cohesion of individual CoPs. While the quality scholarship and thinking of the best participants is still to be encouraged, it is important that individuals for whom this level of participation is difficult (for a variety of reasons as indicated in the findings in this study) are not left to feel that their contributions are of little value. This is the point at which the concepts of different roles within a community (Wenger, et al. 2002) and of legitimate peripheral participation (Lave& Wenger, 1991) come into play.

Yet another example of the wide differences in patterns of engagement and behaviour in the modules was the development of nested CoPs in modules two and three. The idea of nested communities (where smaller sub-communities exist inside the larger main community) is not new in the CoP field (Wenger et al., 2002; Suthers, Harada, Yukawa & Lid, 2005) but those studies reported in the research literature have usually been part of large scale communities not smaller scale teacher TPDL-oriented VCoPs. The nested CoPs in this study resulted in activities and behaviours not envisaged in the original study design and proved to be very helpful when they developed, particularly in the third module.

These findings of differences within individual VCoPs are consistent with the work of Dubé, et al. (2006) who also found that there are many different kinds of VCoPs, and that what works in one type of VCoP will not necessarily work in another. This study shows that the same can happen for various individuals and groups within a particular VCoP (or CoP) when the actions, interactions and behaviour of participants are analysed closely. This study suggests that a meso-scale VCoP for TPDL is a particular type of VCoP and will have particular characteristics associated with the specific circumstances of the context. This study confirms that the one size fits all approach that Dubé et al. (2006) see in much of the VCoP literature is not helpful when applying VCoP ideas in specific contexts. This study provides evidence that illustrates the specific circumstances of VCoPs applied to distributed teacher professional development and issues likely to arise in this specific context.

Developing a strong dialogue culture

The critical importance of developing and supporting quality discussion and dialogue is another key finding. Community of learner and community of practice approaches were the most popular topic of discussion in the reflective written comments and discussions. Within this, the feedback aspect of the community discussions and the networking of like-minded professionals in particular, were regarded as highly valuable. The study also shows that developing a strong dialogue culture in a meso-scale community is no easy task. Four aspects of the findings appear to be particularly important here. First, the findings suggest that it is important to ensure that the skills of quality online discussion are deliberately and thoroughly taught to module participants at the outset. As the study proceeded, more emphasis was placed on making participants aware of the skills and procedures needed to ensure discussion and dialogue was well pitched and well paced. In particular there was an increasing focus on the best approach to the length and depth of discussion entries and on the importance of prompt quality feedback to all participants at all times. These strategies appear to have contributed to the increased success of the later modules.

Second, it appears that discussion strongly situated within a community of practice framework, and cultivating a culture of respectful collegial dialogue, is very important. Findings show that the all ideas are valuable ethos of the CoP concept is important in creating a collegial discussion environment where teachers can feel safe, and therefore more confident and comfortable, about discussing their own practice and sharing it with others. This is vital in opening up the possibility of more thoughtful dialogue and an open sharing of ideas. Participants in this study were very interested in the concept of emphasising dialogue rather than debate, following the principles of dialogue theory (Roth, Herzig, Chasin, Chasin & Becker, 1995; Bohm, 1996; Yankelovich, 1999; Herzig & Chasin, 2006; Herzig, 2008)**.** They saw the preference for dialogue as a highly valuable idea, not only in the context of the VCoPs they were working in, but also as a potentially powerful tool for classroom use. Some went on to experiment with the concept in their own classroom work during their module experience.

Building a culture of trust and establishing an appropriate balance of contribution expectations in a dialogue community in a relatively short time frame, and when many of the participants do not know each other, is a challenge. Findings show this requires very active

facilitation and a strong emphasis on the principles of communities of inquiry (Lipman et al., 1980), learners (Rogoff, 1990), knowers (Palmer, 1998) and practice (Wenger, 1998). In a CoP based approach to TPDL it is important to ensure that power and authority issues are quickly neutralized. In particular, it is very important to ensure that less experienced participants are supported to see their ideas and experience as valid and helpful, alongside the experiences and ideas of much more experienced and highly qualified co-participants.   If different levels and styles of participation are not legitimized and accepted early, a community is likely to end up catering only to the most active and the most able. While this was not planned for in the original design of the study, it emerged as a necessary facilitation strategy in holding a community of busy and different teacher learners together over the full time span of the modules.

Third, findings indicated that online exercises and discussions conducted within a CoP ideology can create the space needed for quality reflective and reflexive thinking. Participants drew on reading and experience to make their initial entries. Then, as participants read the reflective and reflexive thoughts of other colleagues, they were challenged to think again, or to think in new ways. Findings in all three results chapters show this sharing of ideas, experiences and views is highly valued by teachers, and appears to lift the professional thinking and learning to a level most participants have not experienced in other forms of professional development. This result is similar to Bell and Gilbert's finding that this kind of reflective sharing and thinking behaviour is a key strength of ongoing professional development. In Bell and Gilbert's (1996) work teachers had to come together regularly for face-to-face discussion to achieve this. This study confirms that VCoPs for teachers can also achieve this.

A fourth important issue was the inclusion of mixed media elements in the approach. This is recognised in the research literature as a recommended feature of VCoPs (Wing-Lai et al., 2006, p. 46-47). Some face-to-face interaction to supplement online activity was included in the approach from the outset. However, as the grounded ALAR aspect of the study unfolded, nested local on-site, face-to-face CoPs to supplement and support individuals in their participation in the wider distributed VCoP were also developed. These appear to have been important in helping peripheral individuals to participate in dialogue and discussion for longer, and at a higher level. Findings also show that where face-to-face sessions of any sort

were arranged, participants found them very valuable in building relationships and rapport, and in working through issues with one another in discussion and dialogue.

Teachers judged the approach favourably

The results of participant reaction to the VCoP approach to TPDL, using an approach advocated by Gusky (2000; 2003), were reported in Chapter 7. Gusky's model suggests that the effectiveness of TPDL can be measured in three distinct ways. That is, by the teacher reaction to the PD experience, the teacher learning that occurs, and the degree of behaviour change in teacher practice. The module texts, focus group texts, and questionnaire results of this study all provide data suitable for evaluating the results of the approach in each of these three ways.

First, participant response at the Gusky model first stage - reaction - can be gauged from comments reported in the module records themselves. As discussed in Chapters 5 and 6, there were many positive comments and reactions from participants as they completed the modules. However, the focus group questions also allowed participants to react, with hindsight, by providing an overall judgment of the approach. Those who responded to this rated the approach highly in comparison to other forms of TPDL they had experienced previously. However, it was noted that there were still aspects that could be improved. Only one respondent expressed the view that the approach was not as good as other approaches, adding that for them a predominantly face-to face approach was their strong preference.

The dominant reaction from participants was that the 'Where are we at? What does the research say? What does all this mean for us now?' and 'let's have a go at it' process of the approach, combined with on-going online dialogue and support, was a superior form of TPDL than anything they had experienced before. The strength of this reaction in the reflective data, and the way it is verified in the module text, suggests this reaction was strongly felt and predominantly very positive.

Second, participants also reported that their knowledge and understanding of values and perspectives, and how to work with these in the classroom, had improved considerably (Gusky model stage two - teacher learning). Knowledge was a strong theme in the analysis of focus groups and questionnaire comments, and the majority of comments were positive.

Participants reported improved understanding of underpinning ideas, philosophies and theories; the role of values and perspectives in Social Science studies; and the need to go beyond superficial viewpoints to look at the deeper issue of what shapes the values, viewpoints and perspectives of groups and individuals in society. Most respondents suggested in the final questionnaire that this learning continued to have an effect on their thinking about values and perspectives well after the modules had been completed, and for 39% the influence was considered as strong.

Third, many also indicated aspects of their classroom practice had changed as well (Gusky model stage three - teacher behaviour change). Change was the fourth strongest theme in the analysis of focus groups and questionnaire comments. Some felt their pedagogy had changed, others mentioned new activities and strategies they had adopted, and yet others spoke of an increased confidence in working in the values and perspectives area. Again in the final evaluation responses three-quarters of the respondents said the modules continued to have an effect on their thinking about strategies and learning activities. Over 40% rated this influence as strong.

Critical evaluation from the participants indicates that they felt the approach was particularly strong in three areas: the community aspect; the emphasis on reflection and sharing; and the situated and activity oriented aspects. Some of these have been discussed above, and others will be examined further in the next section. Two other aspects of the approach were also judged favourably, although at a lower level of approval than the first three. Classroom trialling was considered valuable, and participants felt the nature of facilitation was well judged and largely successful. Again these are discussed in more detail below. In the same manner, participants were frank and realistic, and also reported what they saw as weaknesses, including the ways in which participants were grouped and interacted, and some aspects of the nature of the readings and materials within the modules. There was also some negative opinion on time and timing, and on the merits of the reading and writing aspects of the approach.

While a clear majority of participants reported the strengths and weakness above, there were two aspects of the approach about which participants were evenly divided. There was a marked contrast between those who considered the technical aspects of the approach positively and those who found it problematic. Similarly some were very positive about the

level of commitment shown by fellow participants, while others were quite dissatisfied. The subtleties of the reasons for these opinions and judgments were reported in Chapter 7 and are reviewed at various points in this chapter.

Evaluating the Approach against the Seven Point Framework for a successful VCoP Approach to TPDL

While it is important to report the four major findings discussed above it is also crucial to evaluate the outcomes of the study against the seven key factors in successful TPDL and VCoPs identified in Chapter 2. These seven factors can be seen as a theoretical framework for the evaluation of module effectiveness and success. Each of the seven factors is now discussed in turn and linked to study results and findings.

1. *A clear purpose and focus of immediate and practical relevance*

A focus on relevance, and on the value of content and process learning gained through TPDL experiences, is very important in successful VCoPs for TPDL. This aspect of TPDL links strongly to the concept of situated learning. Teachers need to know exactly what the purpose of any TPDL experience is and how it will relate, in a direct way, to their particular teaching work. In this study each module had a tight focus on changes in Social Sciences curriculum and pedagogy, and emphasised the key role of values and perspectives in Social Sciences education. Each of the three module communities focused on the professional learning needs of Social Studies and Geography teachers who wished to improve their understanding of, and skill in, teaching values exploration and perspectives. The purpose, focus and relevance of the modules was made clear to participants very early, and sustained throughout the modules. The tightly structured nature of the module process and structure (as outlined in Figures 4 and 5) ensured that specific objectives and procedures were always openly and clearly stated.

The approach also focused directly on the situations in which participants were working at the time of their module involvement, and the modules were strongly classroom focused at a number of points. Two of these points were particularly situated. First, participants were asked at steps 4 and 6 of the approach (as outlined in Figure 4) to locate their thinking and action in their own classrooms. In stage 4, teachers reported on familiar instances and

examples of the ideas and activities under consideration from their own experience. The findings show teachers were readily able to do this, and learned a good deal from one another in the process. There were a number of appreciative comments about the range of new ideas shared, and their suitability for classroom use.

Second, in stage six teachers were asked to trial a new idea or activity in their classroom and then report back to the community. Again this activity was highly situated. Unfortunately as mentioned above, this aspect of the approach was not so successful. Findings certainly show that this idea is possible when using this approach, but a relatively small number of participants got to this part of their module work. The problem appeared to be related to time and energy issues. Overall the findings in this study affirm the research literature emphasis regarding the importance of situated learning and the need for clear focus and practical relevance. Findings also suggest the approach had some success in this, although for some the focus on this aspect did not take effect early enough.

2. *Diverse membership of, and roles in, a community*

Diversity in the membership of CoPs is another issue highlighted in research literature. In this study the first module was very small, with little diversity. However, the second and third modules contained a wider variety of participants, including beginning and experienced teachers, Social Science department heads, Social Science advisors, and regional and national subject leaders. The findings showed that this diversity was highly valuable, and certainly created a strong and varied pool of ideas and experience. There were a number of instances where participants spoke highly of this variety. There were good examples of young professionals learning from experienced colleagues in the community, but equally some of the younger participants introduced fresh and interesting ideas that widened the repertoire of older members too, in a way consistent with Lave and Wenger's (1991, p. 88) notion of multiple levels of participation in a community of practice.

On the other hand, some individuals, particularly the less experienced and the less confident, were initially intimidated by the breadth and depth of the offerings of some of more experienced members. Again this is consistent with the notion of legitimate peripheral participation in a community of practice (Lave & Wenger, 1991). Initial peripheral participation saw newcomers "both absorbing and being absorbed in - the culture of practice"

(p. 95). As newcomers come to understand the concepts, processes and relationships of the culture of practice, they are gradually "transformed into a practitioner, a newcomer becoming an old timer" (p. 122). This stands out in the findings as one aspect of the VCoP approach to TPDL that needs careful facilitation and management. It is important that the less confident newcomers are encouraged to stay in the community until they become more comfortable and begin to get the sense that they have a legitimate place in the community. They need to be encouraged to see that they are able to integrate into the community of practice, to come to understand the language and the ways of the community, and then to contribute their ideas and thoughts to the community. This is very important in a meso-scale community because it operates within a relatively short timeframe (in comparison to many of the CoPs in the literature). Thus the process of transformation from newcomer to comfortable, developing practitioner needs to be accelerated by providing strong affirmation and encouragement to the less experienced and less confident. This is primarily the responsibility of the facilitator, but core members, especially those who have prior experience of VCoPs, can also help in this.

The results in Chapters (5 -7) show that the participants in this study took part in the modules in different ways, with some assuming quite different roles. This happened in spite of the fact that there was no attempt to formally induct or develop people into specific roles of the type typically outlined in the VCoP literature. The roles of leader, core member and support person were, for the most part, assumed by me as the community leader and facilitator, and the members of the communities were mostly ordinary community members. However, some individuals did assume additional roles. For example one participant became a technical support person in helping members get their photos up in ClassForum. Other participants became core members when they helped facilitate discussion or formed sub-groups of particular kinds. In this study these roles were assumed organically and naturally, in the spirit of much of the literature of communities of learners, and appreciative inquiry (Cooperrider et al., 2003; Whitney & Trosten-Bloom, 2003; Preskill & Catsambas, 2006), and the practical and emancipatory approaches to inquiry of ALAR (Carr & Kemmis 1986; Zuber-Skerrit, 2001).

In setting up this study, I considered formally developing different roles as highlighted in some VCoP research literature but decided it would not be practical, given the pressured and busy lives of teachers. Thus participants in this study were not asked to take on the formal roles often seen in larger and more sophisticated VCoPs. As facilitator, on the other hand, I

assumed a range of roles, leaving participants with more time to just participate. If some individuals chose to do more, and assume core and support roles I would see that as bonus, helpful for the whole community and empowering for individuals. However, findings suggest quite strongly that this is an aspect of the approach that needs to be re-thought.

Findings suggest that, on reflection, it might be a good idea to outline the possibility of adopting different roles, and what they might entail for all members at the start. This would invite individuals to take on a core role if they wished to. The findings of this study show distinct differences here which need to be accommodated in some way. People either need to know, understand and accept that all should participate fully, or they need to agree that different levels of participation are acceptable.

Indeed, the idea that the community itself discusses what kind of community they wish to be early in the module process would seem, in light of this study, to be a very helpful thing to do. The participants might want to decide whether they want to be a technical, practical or emancipatory community in Zuber-Skeritt terms. Zuber-Skeritt (2001), following Carr and Kemmis (1986), suggests that ALAR communities can operate at different levels. At the technical level there is focus on the efficiency of practice and professional development with the facilitation from an outside expert. At the professional level the emphasis on efficient practice and PD remains but there is an added aim to transform the consciousness of the participants. Facilitation is more Socratic and/or participatory, and relationships within the group more co-operative. At the critical level the aim is to move beyond the first two levels to one where participants are emancipated from the dictates of tradition, self-deception and coercion. At this level facilitation is shared and relationships with the group are highly collaborative.

Alternatively, participants may wish to be a community in which some people will take part at the technical/practical level, while others will choose to operate at the practical /emancipatory level. Such a discussion could also determine different participation, power and rule options. Do participants want to be facilitated, or to be consulted? Do they want to assume full shared responsibility for the conduct of the module and for each other? There is risk in the approach used in this study that the facilitator assumed too much power, or that participants chose to leave all the power with the facilitator and become mere followers (Wertsch, 1991; Barton & Tusting, 2005).

The findings in this study suggest that when individuals were situated within a supportive learning environment with adequate time and support systems in place, they were able to learn a great deal using the VCoP approach to TPDL. However, others struggled when such support was not at hand, or other contractual obligations complicated their involvement. For example, some participants were linked with the modules as part of a school contract with the Ministry of Education. These contracts themselves created considerable additional workload for teachers, and some found out quite late in the piece that the MoE required that they take part in an additional professional development module on top of this. While this requirement was outside my control, it was unfortunate that some were not aware of the MoE requirement until after they were committed to their MoE contracts. For some participants this created overload and they consequently withdrew early in the module experience.

However, the results for those who remained in the modules of this study confirm the prevailing view in the research literature that having a diverse group of people in a CoP fosters good cross-group discussion, and results in a lively and interesting community. This study, in contrast to the main view in the literature, did not set out to develop different roles for participants. Findings show this decision probably led to missed opportunities because it seems that it is best to have clear understanding about what various roles might entail. However, findings also suggest that in a meso-scale community for TPDL, this would probably not need to go as far as developing substantially different roles in a highly formal way.

3. *Provide strong leadership and facilitation*

One of the most important aspects of any professional development experience is facilitation and this is particularly important in a virtual context because, for many participants, online learning is a new and unfamiliar experience. The CoP concepts and values embedded in this approach are also likely to be novel. Further, the values and perspectives content of the TPDL in this study was relatively unexplored. Participants often needed help with some or all of this.

The management of the flow and pace of VCoPs is considered a key factor in the success of VCoPs, and the facilitator plays a key role in achieving this (Wenger, 1998; Wenger et al.,

2002). The facilitator also has a key role in ensuring individual learning needs are met and that the relationships between individuals and groups are consistent with the CoP concept. One aspect of this is maintaining an appropriate way of attending to issues in an 'off the record' manner (Brown & Leverson, 1987, p. 74), or by the 'back channel' (Wenger 1998; Wenger et al., 2002). This requires a high level of sensitivity and good communication skills.

A number of the participants in this study reported that this aspect was critical. In particular, a number of the participants mentioned how important rapid responses and feedback were in maintaining their interest and enthusiasm. As facilitator, I was acutely aware of the importance of this, and tried to be watchful and to act promptly on this issue whenever necessary. Evidence presented in Chapters 5-7 shows how I worked to achieve this. If participants were providing good feedback to one another I would usually stay in the background. However, as soon as there was a lull, or if I could see a particular individual was not receiving a response, I would quickly provide one. This was particularly vital in helping late-comers gain some sense of community from their module work. This study trialled a number of ways to ensure this rapid feedback was a reality for all participants including creating smaller and more responsive discussion subgroups and implementing dialogue buddy partnerships. However, both of these approaches were only partially successful. Results showed that while some individuals were able to use these provisions effectively, others found that it just added more complexity to the whole process and clearly did not work.

Another key point here is the roles that individuals within each learning community can play in assisting with facilitation. One of the key concepts in a CoP approach is that participants should move beyond a passive apprentice-master conception of professional development to becoming active participants in a community of knowers (Palmer, 1998). In this approach all participants are expected to lead and to think about the way other learners are experiencing the module, and react accordingly. In doing this they become co-leaders and co-facilitators. On reflection, and in the light of findings, there are two important points to make here. While the CoP theory covered at the beginning of each module outlined the need to move beyond apprentice-master thinking and adopt a willingness to share ideas and experiences in a dialogue community, there was little done to introduce teachers to the idea that they might actually become co-facilitators. There were two reasons for this. First, I assumed that as trained teachers, participants would readily be able to do this. Second, as

explained earlier, I made a conscious decision not to complicate the approach by formally expecting people to take on formal leadership roles. As already discussed above, findings showed that some individuals were readily able to assume this kind of role and this aspect of the approach may need further thought. Specifically, it could be helpful to identify who the potential sub-leaders might be, and to invite and/or induct them into this kind of role. Secondly, there needs to be much more done in the earlier parts of modules to introduce participants to the idea of division of labour and different roles individuals can perform within a community. There is probably also a need to invite participants to participate at various levels in a more systematic way.

The findings of this study suggest that participants need to be introduced to a deeper understanding of what it is to be a member of a community of practice. They need to see the community as a team rather than as a collection of individuals, and within that team people will assume different roles. Some will become part of a senior or leadership group in the community, while others will take part as regular members, and yet others may think of themselves as 'bench players' and able to take part only some of the time. However, as all take part when and as they can, and with a sense of wanting to make sure the whole group benefits, the group may have a better appreciation of the role of individuals in the community. Such a notion would need to be carefully discussed to ensure all were happy with this as a way of creating flexibility and a range of valued involvement roles, but not of excusing some to ride along on the hard work of others.

Some participants suggested or implied that the facilitation style used was too kind and too tolerant. These participants felt that the facilitator should have pushed things along faster, and insisted on greater and faster replies and entries from some of the 'come lately' participants. They suggested that the slowing and lack of pace and flow at some points meant they lost interest. Certainly, this study shows this is a very significant issue and a difficult balancing act for any facilitator. In this study, the modules were run as small meso-scale communities that were far less sophisticated than many of those reported in the research literature (mostly from business and industry). As a result the facilitator was required to assume designer, researcher, professional developer, and teacher/facilitator roles. Findings show that it is possible to combine these functions in one person. However, where this is attempted, the designer-professional developer-facilitator would need to have some depth of experience in all these roles. If this was not available within the one person then the approach

would become more complex, and a leadership team to provide sufficient experience across the range of leadership roles would be needed.

This study therefore confirms a predominant view in the literature that facilitation and leadership are crucial issues. As reported earlier, while the participants generally seemed satisfied with the facilitation and leadership, a close reading of the results suggests the VCoP-TPDL approach needed to be modified to ensure there was more understanding and acceptance of different roles in the community, and more involvement of some participants in leadership in a more formal way. However, this would require striking an appropriate balance between complexity and manageability.

4. *Use of technology, concepts, tools and media*

Another important dimension of the VCoP approach to TPDL is the online e-learning platform which is the site of the activity of the community of practice. Research suggests that the quality of the online site of any enterprise using the web as an e-learning environment is critical for success. The site must be well laid out, well organised and easy to move around (Preece, 2000; Preece, 2001; Wing-Lai et al., 2006). Evidence presented in the findings chapters shows that this was one of the more difficult aspects of this study. While I had considerable experience as an online teacher, and therefore some skill in developing an appropriate site for the modules, I am not an expert in web design and engineering. Findings show that the web site for this study was adequate, but that there was considerable scope for improvement. The version of ClassForum used was basic, and there are much more visually attractive and easier to use platforms now available. Some participants found the site clumsy and confusing. On occasions this was probably compounded by the lack of online computer experience of some participants. Nevertheless, the online asynchronous discussion community technology was appropriate for this approach in that it provided a sound platform for a dialogue community within the technical capabilities of most participants. While some struggled with aspects of the technology at times, the results reported in Chapter 7 suggest this was a relatively minor problem across the participants as a whole. For some this was seen as a challenge, but one that most felt satisfied they had overcome.

The findings do, however, show that many participants feel that some form of face-to-face activity is highly desirable to supplement the predominantly online mode of a VCoP. Indeed, where it was possible, opportunities for face-to-face meetings were taken in this study, and where these occurred they were most appreciated and were considered a positive aspect of the study. There is clear evidence (in line with research literature) that a mixed online - face-to-face approach, when it was offered, was very helpful and provided considerable support to some participants. On balance it can be concluded that the online site and supporting technology worked satisfactorily.

Online technology is just one of the tools in this approach. Professional readings are another. Academic or professional reading is often considered an important aspect of quality professional development (Shulman, 1987; McMeniman, Cumming, Wilson, Stevenson, & Sims, 2000). The readings used in each topic of each module in this study were key tools, or resources, and provided participants with new ideas, concepts and perspectives on practice. Participants were to use the readings, and their own personal understanding of them, as a main source for their written contributions in the exercises and discussion about each topic as they worked through their module.

Findings show that this aspect of the module worked well for most participants, with a sizeable number reporting that this aspect of the approach was stimulating, informative and challenging. There is clear evidence in the online dialogue entries that most participants engaged with the readings at depth. They were able to draw key ideas and activities from the readings, and discuss these with one another in a thoughtful manner. Further, a number of the more enthusiastic participants were able to adapt ideas and activities for use in their classrooms during the modules. A number mentioned that they appreciated the mediated nature of the readings. That is, they were grateful that the readings had been carefully selected and cut down, or chunked, to make them manageable for busy teachers. On the other hand, the readings were problematic for some participants. For these individuals the readings were seen as too long, repetitive and academic, particularly in the earlier parts of modules. This created the impression, for some participants, that the whole approach was too complex and not practical enough. Consequently they either withdrew, or became peripheral, or stayed in the module but reported at the end that the readings needed to be reduced further and made more streamlined, shorter, and less complex. Thus, while there were issues associated with

the readings, there were more participants who appreciated and enjoyed the readings than the reverse.

Another important tool of the VCoP approach to TPDL is the high value placed on the existing professional and practical knowledge of participants, in this case teachers. It is regarded as of equally, if not more value, than the ideas of the experts in the readings. Professional knowledge is regarded as another source of ideas for the community. This feature of the approach is, in essence, a reification tool (Wenger, 1998, p. 57-62). That is, it encourages the process of making the implicit explicit, of taking that which is hidden in the internal practice repertoire of individuals, or isolated small groups, and codifying them in a formal text in a way that they become available to a much wider community. Community of practice theory highlights the importance of all members of the community, from old hands to newbies, from the legitimate periphery to the core members, all feeling that they can contribute to the community by sharing thoughts, ideas and experiences from their own professional and practical knowledge (Lave & Wenger, 1991; Wenger, 1998; Wenger et al., 2002).

The findings of this study show that the use of varied professional knowledge in the approach worked very well for most participants, with many comments stating how valuable they found the variety. There is also evidence that each module community participated in this aspect of the approach in the way expected. Teachers of all backgrounds and levels of experience contributed. Some of the less experienced were often reluctant to do this initially, but as they came to see that their CoP was a genuinely inclusive and non-judgmental environment, they were able and willing to contribute. Thus initially peripheral participants were quickly able to become much more involved in the community and transform into active participants. A key aspect of achieving this so quickly was the TPDL formal requirements for all participants to contribute to online entries and exercises.

The findings about this aspect of the approach have strong similarities to Bell and Gilbert's (1996) finding that anecdotal stories and the sharing of classroom experience was a highly regarded source of information and ideas in their professional development work with science teachers. It also exemplifies the concept of distributed cognition in social-cultural learning theory and in community learning theories where individuals learn from, and with, each other in a social way. Again, while this aspect of the approach worked well with most

participants, the late comers were not as effective as those who participated at a more appropriate time. While the later participants often had good experiences and ideas to share, they were posted into the community too late for most other participants to gain benefit from them. However, this is more of a comment on the way some individuals engaged, rather than a weakness of the approach itself.

The classroom trialling of new ideas and practices is another key concept or tool in this approach. Research suggests that unless teachers promptly implement new ideas and practices gained in a professional development environment, there will be little change in their classroom practice (van Driel, Beijaard, & Verloop, 2001; Borko, 2004). In this approach the intention was that teachers will implement new practices within the professional development experience itself. Thus experimenting with new ideas in the real world is not left to chance, but is built into the professional development process. The trial component is also one of the key points within in the approach, whereby teachers are able to engage in an ALAR manner. The intention of this component (or tool) is that teachers try out a new activity, gather data about how it operated, and report their findings to the wider community. These findings can then be discussed within the community and new ideas and angles on the approach identified. Teachers can then build on this reflective analysis, modify ideas and activities, and then run a second trial, building in the community-suggested improvements.

Data presented in Chapters 5-7 suggest that classroom trialling within TPDL oriented VCoPs is achievable, but often difficult. Some of the most enthusiastic and committed members of each learning community did complete trial work and report back. On a few occasions other members of the respective learning communities engaged in dialogue about the issues raised in trialling new ideas. However, for many of the participants this aspect of the approach was 'a bridge too far.' It was seen as a desirable aspect of the approach, but one difficult to achieve within the time and energy constraints of busy teachers in the midst of a teaching term. At other points in the modules a number of participants commented that they were using, or intended to use, others' ideas in their own classrooms. However, apart from a few mentions in passing, the outcomes of this were not reported back into the community in any detail.

Another problem with this trial work was the difficulty in arranging the kind of trial they wanted to conduct within a relatively constrained teaching program. A number suggested

they could not trial their idea at the time required because the class had to stick to what they were timetabled to do in the school programme at that time. This is something that more experienced teachers would be able to work around. However, many of those who mentioned this as a problem were less experienced teachers who perhaps lacked the confidence and/or the skill to quickly adapt their teaching programme, in order to achieve a higher professional development goal.

Overall, the findings in the above key factor suggest that the technologies, conceptual tools and media were adequate, but could be improved. Again, as in other sections, findings in this study confirm that this aspect of VCoPs is very important.

5. *Community relationships and values*

Community of practice theory and pedagogy was at the heart of the approach to teacher development used in this study. A strong commitment to the ideals of community of practice is vital in bringing all the activities and tools together to achieve new levels of knowledge, skill and practice. At the outset of each module teachers were introduced to CoP concepts and practice. Teachers were quickly engaged in discussion about their prior experience of this type of approach and invited to voice their feelings about it. The findings show that clear values and expectations, respectful and professional relationships, and the establishment and maintenance of a strong dialogue culture were all very important in this approach. The results reported in Chapters 5-7 suggest that teachers came to understand CoP theory relatively quickly. Most were able to use CoP principles and practices in their module work at an early stage, and then maintain and build their CoP skills throughout their time in the modules. Most were able to function as active members, and some individuals achieved a very high level of CoP skill, such that they were clearly operating as core members of their communities. Focus group and questionnaire analysis also showed that this aspect of the VCoP approach to TPDL was the most highly rated.

The community component of the approach is a key conceptual and practical tool in this study. Participants needed to understand the concept of CoP in both theory and practical terms in order to work effectively in the modules. It was the basis of the social context, in SPP terms (Bell &Gilbert, 1996) that enabled participants to engage in meaningful dialogue and to construct meaning by drawing on distributed cognition and experience (Paavola,

Lipponen & Hakkainen, 2004; Putnam & Borko, 2000). Participants worked in a cooperative and collegial way to learn more about key Social Studies or Geography education concepts and practices, and to share ideas and experiences in implementing them in classrooms. The dialogue community was the key social context for the approach in action.

The importance of shared and explicit values to underpin community relationships and behaviour is frequently emphasized in the research literature. These are the values of normative public discourse, and are generally well understood by most people. Teachers work with large numbers of students, colleagues and parents and are, as a rule, already well aware of the importance of relating well to others and respecting the norms, rules and values of courteous public discourse. However, the values of a community of practice are stronger than those expected in normal conversation. CoP values favour dialogue in open, inclusive, collaborative and constructive ways, and shun adversarial, competitive and destructive ways of working (Becker et al., 1995; Tannen, 1998). A model used by public dialogue groups such as the Study Circles (Pan & Mutchler, 2002) and Public Conversation movements (Becker et al., 1995) used contrasting dialogue and debate which was specifically introduced early in each of the values exploration modules, and proved a popular tool for the community and for teachers in teaching values exploration in their classrooms. It is important to note that the values of a dialogue culture community of practice do not preclude disagreement. However, dialogue culture takes a strong stance on how disagreement is handled (Bohm, 1996; Herzig, 2001). Key to this is disagreeing in a way that does not diminish the status of another participant, and in a way that allows all involved to save face as advocated in politeness theory (Brown & Levinson, 1987; Locher & Watts, 2005).

These underpinning values also provide a basis for the rules or expectations for the community. Rules are identified by activity theorists as a key aspect of effective action systems (Engestrom, 1987; Miettinen, 1996). The CoP approach in this study can be considered as an action system that drew heavily on the rules and guidelines of community of inquiry and community of learner theory (Sharp, 1987; Rogoff et al., 1996). Evidence in this study suggests that forming a clear idea of what makes a quality community of inquiry, learning and practice at the very outset, and recognising the role of an agreed set of rules, procedures and practices in this, was very important. These rules were then used throughout to ensure that the social context of the community was 'safe' and productive for all

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participants. The study findings suggest that the approach was successful in providing a safe social context and clearly understood rules in which quality teacher learning could flourish.

It is also suggested in the research literature that relationship factors are very important in communities of practice and learning. It is claimed that there needs to be respect of all community members for each other and for the specific knowledge and experience each member brings to the community. This highlights the need for a planned approach to establishing strong and supportive relationships within a community. This was achieved in this study through the initial two topics in each module, and fostered throughout the project by the facilitator and by core members of the community. However, findings from this study also suggest that some found it difficult to engage in the approach to begin with. The main issue here appeared to be that some individuals were frightened to 'jump in' to a discussion community where they are expected to put ideas out into a public arena. This is typical of neophytes who are initially peripheral members of a CoP. However, as already discussed, the CoP method used in this study sought to reassure participants that all ideas, however modest, were welcome and would help the community, and that discussion protocols ensured that even where there were strong differences of opinion, all input was respected. The findings suggest that it is helpful to employ a politeness theory, relational work and face work approach (Brown & Leverson, 1987; Locher & Watts, 2005) to ensure that the self-confidence and mana of all participants is protected. The approach used in this study was also underpinned by appreciative inquiry (AI) principles which focus on the positive, and on building on what already works well (Cooperrider et al., 2003; Whitney & Trosten-Bloom, 2002; Preskill & Catsambas, 2006).

Findings suggest that for some teachers the level of trust and confidence needed to engage in a CoP had to be built gradually. Findings suggest that for some individuals this was not achieved quickly enough in some of these communities, and participants failed to really get involved. Others took some time to feel accepted and become comfortable with the CoP approach and therefore became fully involved only later in their module experience. This difficulty may be a reflection of the time frame and the online nature of the particular approach used in this study. Community of inquiry theory and practice (Lipman et al., 1980; Sharp, 1987) advocates that participants sit out and listen to dialogue until they are ready to join in. Similarly, community of practice theorists note that, in large CoPs, many people are actually peripheral members of the community and mainly just listen (Lave & Wenger, 1991;

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Wenger et al., 2002). Research has shown that these 'lurkers' or peripheral members are quite happy to just 'listen' and not participate actively. Yet they still learn a considerable amount from their peripheral position (Nonnecke & Preece, 2001; Wing-Lai et al., 2006).

However, the modules in this study were structured to ensure that clear guidelines for participation were established, and participants were expected to contribute in all discussions and activities from the outset. This was considered to be important in making a commitment to a professional development module. As a result of this element of gentle but firm compulsion, those who were natural listeners who preferred to be peripheral, may have felt pressured, and therefore withdrew. It may be that the approach, as set up for this study, did not do enough to legitimize peripheral participation nor provide sufficient advice and support to less confident participants, to move them from a peripheral to an active role relatively quickly (Wenger & Lave, 1991).

Chapters 5-7 show that the community dimension of the approach was largely successful. The VCoP approach to TPDL attended to this issue by building and maintaining a collegial professional community throughout. The first two stages of the approach were set up to foster this in a structured and deliberate way. The approach then encouraged and developed the attitudes and practice of sociability and participation throughout the VCoP experience. The findings showed that participants in each module were able to discuss, share ideas and information, and agree and disagree with one another in a non-threatening and safe way. The community aspects of the approach were the most frequently mentioned items in focus group and questionnaire comments, and these comments were, on the whole, very positive. These findings suggest that this study arguably emphasized the community dimension of VCoPs even more strongly than advocated in the research literature. This stems from the way this study draws on a wide range of community oriented literatures in its design.

6. *Timeframe, pace, rhythm, flexibility and challenge.*

The VCoP approach to TPDL of this study set out to provide teachers with sufficient time to develop in-depth knowledge, and to discuss and explore this in an online professional learning community. This communal inquiry enabled constructivist, social, and distributed cognition to come into play. Initially, the approach was designed to achieve this within a six week module. However, the results of the first two modules showed that this timeframe was

unrealistic given the busy and multifaceted nature of teachers' lives. Thus the third module allowed much more time. The initial planning was for a 14 week module run over the last part of one teaching term, spending the term holidays catching up or looking ahead, and then concluding in the first half of the subsequent school term. As it turned out, some participants took 20 weeks to complete the third module. Thus the timeframe used in the third module was more like that of a full university semester. The outcomes of the study suggest strongly that this extended timeframe, including the planned break and catch-up time, resulted in a far higher level of professional engagement, discussion and learning.

The VCoP modules in this study included all five stages of the life-cycle of a CoP (as described by Wenger et al., 2002, p. 69) within eight to 20 weeks. This is an extremely short time frame in terms of most VCoP research literature, where one to five years, or 52 to 260 weeks is often seen as a typical lifespan for a CoP (Dubé et al., 2006; Wenger et al, 2002). However, some writers are strongly critical of a one size fits all approach evident in much of the VCoP literature (Dubé et al., 2006). Such critics note that VCoPs are highly varied across a whole range of criteria, including life cycle (Hoadley & Pea, 2002; Henri & Pudelko, 2003; Dubé et al., 2006). For example, Dubé et al. (2006, p. 75) note that a VCoP, "can be assembled on a temporary basis to accomplish a specific purpose". They further observe that "a temporary VCoP may undergo less difficulty, since a high level of energy may be invested for a rather short period of time" (p. 75) and the community can be more narrowly focused, creating greater certainty and a stronger sense of purpose. The data presented in this study provide verification of this point, and are somewhat different from much of the VCoP literature.

VCoP research literature also emphasises that communities need to have shape and structure, and pace and rhythm (Wenger et al., 2002). Again, this is a feature of quality communities of practice that was firmly built into this approach. The use of directed reading, structured exercises, planned trials and reporting back constitutes a highly planned and structured approach. Indeed, it could be argued that this study was in fact much more tightly planned and more top down in structure and management than is desirable in an ideal online community of practice. However, to achieve a satisfactory outcome in the short term meso-scale of this study, more structure and tighter management of the CoP process was considered important. Nevertheless, there were times in this study when flow and rhythm became problematic. At a number of points in every module the flow of the module became disrupted

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and slowed, or stopped altogether. At times facilitator intervention was able to re-establish momentum. At other times individual determination to complete helped too. At yet other points (such as in the GP module) the community went into recess after a brief burst of enthusiasm and could not be resurrected.

The desirability of flexibility in time and structure to enable different people to approach the learning in a way that best suits them is also frequently highlighted in the research literature. The approach in this study was specifically designed at a meso-scale to allow time flexibility, and considerably more time than standard TPDL experiences employ. This appears to have allowed participants time to think and work through key professional issues, and the results in Chapters 5-7 show participants valued this aspect of the approach highly. The grounded ALAR aspects of the study enabled me to identify the need for even more flexibility than first envisaged. As a result the time frame for the approach was extended progressively during the study, and findings suggest this greater flexibility helped improve the completion rates and the quality of participation entries within modules.

As noted above, time is a key issue for teachers. The time the average classroom teacher can afford to devote to a VCoP for TPDL experience is highly constrained. An average secondary school classroom teacher in New Zealand works for around 43 to 47 hours a week on their normal duties (Invargson et al., 2005). Teachers often feel "time is the enemy of freedom" ... [and] … "they experience it as a major constraint on what they are able to achieve" (Hargreaves, 1994, p. 95). Further, the recently New Zealand best evidence synthesis on teacher professional learning noted that extended timeframes for TPDL were necessary because "the process of changing teaching practice involved substantive new learning," and often "challenged existing beliefs, values, and/or the understandings," (Timperley et al., 2007, p. xxviii). A point also argued by Bell and Gilbert (1996).

The findings of this study suggest that if VCoPs are to work for a wide range of teachers they need to operate at the meso-scale. The VCoPs need to be relatively short and straight forward, although much longer than standard 'just in time' TPDL. The findings of this study suggest that a 12-16 week lifespan is the most suitable length for VCoP for TPDL modules for teachers. The most effective approach in the three modules used in this study operated for six weeks in one teaching term, followed by a further six weeks in the following term, and a two – three week flexi-period in the non-teaching break, making up a 14-15 week

programme. The flexi-time period between the two six week blocks provided participants with catch up or planning ahead time, if needed, while they were free from the stresses of classroom teaching.

There is a strong assertion in the literature that a CoP should emerge from an internal, organic, and evolutionary kind of a process (Wenger et al., 2002; Conrad, 2005). It is often suggested that CoPs will be unlikely to succeed if they are created from the outside. Wenger et al. (2002, p. 65-91) outline an elaborate process for planning and incubating a new CoP, and Conrad (2005, p. 17) argues that "community grows; it is not made or given". However, this point is a contentious one. It has been noted that while CoPs were originally thought to emerge spontaneously from within, some studies confirm that much can be done from without (Millar & Whitney, 1999; Dubé et al., 2006).

In using a meso-scale approach to CoPs, a sense of community needs to be established quickly, using a "swift trust" approach (Jarvenpaa, Knoll & Leidner, 1998; Pauleen & Yoong, 2001). In the approach used in this study, teachers were introduced to the idea of CoP in week one, and were expected to operate in a CoP way within a week or two.   There was no evolutionary and staged set up and early development aspect to the modules in this study. They were there and ready to go. The findings in this study suggest that VCoPs for TPDL can operate effectively when they are strongly shaped and structured from without and when they operate over a relatively short life span.

The reported findings confirm a view predominant in the research literature that pace, rhythm, flexibility and challenge are all important factors in the life of a VCoP. However, this study is consistent with Millar & Whitney (1999) and Dubé et al. (2006), and contrasts with much of the other VCoP literature on the matters of lifespan and evolutionary development. This study shows that short lifespan and pre-planned (rather than evolutionary) CoPs have a place and can be effective, particularly in an in-school context with teachers.

7. *Dialogue and thinking*

Developing and nurturing in-depth dialogue and thinking is an important aspect of the VCoP approach to TPDL. The main findings reported in the first section of this chapter discussed this item in some depth. However, two additional points for discussion here are the

extent to which the aspects of personal thinking and reflection, and the online entries, highlighted in Figure 3, facilitate this.

Personal thinking and reflection occurs at a number of points in this approach. It occurs when participants: engage with the readings and think about the issues raised; think about how readings relate to their own existing practice; decide what to write in their online entries; engage with and think about the entries of others; and decide what to write in response to the entries of others. Data relating to this aspect of the approach can be only partial, as personal thinking and reflection is largely private to the individual. Times of quiet personal thinking and reflection do not appear in the online record. On the other hand teacher comments in focus groups and questionnaires, as well as in their entries in the online discussions, provided some information on how this aspect of the approach worked.   The evidence available suggests that this aspect of the approach worked well for most participants. There were, however, issues in finding enough time to complete the reading and thinking needed to make thoughtful and informed contributions in their online entries. Participants used a range of ways to do this. Some preferred the evenings, others early morning, yet others the weekend, and some found school vacations the best time for reflection. Some found meeting together formally or informally at school also helped them process information and ideas more effectively.

The quality of discussion generated by the more active and core members of the community was high, showing that the approach encouraged individuals to think deeply. However, not all achieved this level of thinking and engagement, and clearly there is room for further thought and experimentation to discover how to engender greater depth of thinking in less-engaged participants. The online entries used in this approach were also part of the in-depth dialogue and thinking aspect of the approach in this study. Initially, participants were asked to write down and post their thoughts and ideas about a topic, using both their understanding of the readings, and their own experience and knowledge. This aspect of the approach can be seen as what Wenger (1998, p. 57) calls reification, and what Wenger et al. (2002, p. 39) and activity theorists refer to as creating key documents and tools (Engestrom, 1987).   In this way a community works toward codifying its practice, through developing a shared understanding of what it is to effectively carry out a particular aspect of practice.

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Teachers were also asked to post further entries in which they commented on, discussed and debated ideas with each other. This too contributed to the process of developing a shared understanding of practice. However, in personal, professional and social terms (Bell & Gilbert, 1996) it is also a way of structuring dialogue with one another on a regular basis, so that the social and professional aspects of the approach can function. The findings show that a majority of the participants engaged in the way expected. Most reported that they enjoyed the process of sharing ideas and views, and receiving immediate feedback on their online comments. The thoughtful and interactive dialogue evident in the findings was rewarding. Some individuals were able to quickly become very skilful in operating in a fully CoP and social, professional and personal (SPP) way, and developed high level online dialogue skills.

However, findings also show there was considerable variation in the form of engagement and involvement across the sample. While some participants engaged fully and promptly, others did not engage fully in a community of learner style dialogue at the outset. Interestingly, there is clear evidence that these 'come lately' participants still gained a good deal from their involvement in the module. They often enjoyed reading the dialogue of others, even though the dialogue had taken place weeks earlier. These participants can be thought of as peripheral (Lave & Wenger, 1991; Wenger et al. 2002), and while they did not contribute much at a time when the more active participants could benefit from it, they personally gained a considerable amount from their delayed involvement. However, in a number of instances these community members were not peripheral or lurkers in the usual VCoP sense of being inexperienced newcomers. Their peripheral position was instead a function of the other factors, such as their inability to participate at the expected time due to other work pressures, or to technical difficulties. The continued presence and involvement of a watchful facilitator late in the module was important in providing some feedback and interaction for these late engagers.

Clearly, the in-depth thinking and dialogue aspect of the approach appears to have worked very well for those who were able to get past some of the early frustrations of getting into the modules and into the rhythm of an online inquiry within a dialogue community. There were contrasts in the way participants used the online entries, but nearly all of the more committed participants gained a great deal from this aspect of the modules. Even those who only engaged quite late in the process appear to have learned a great deal and enjoyed the process of online entries and responses.

This study confirms a common view in the research literature that in-depth dialogue and thinking are vital to quality VCoPs. There is clear evidence in this study those teachers who became fully evolved in the modules also found this dimension of the VCoP for TPDL approach to be exhilarating and helpful. Because the seven way framework for quality VCoPs is based most strongly on VCoPs rather than TPDL, it is important to briefly discuss one further issue of vital interest in this study at this point.

Personal and professional challenges for teachers

Times of considerable curriculum change present both personal and professional challenge for teachers. Research literature on professional learning regularly raises concerns about the personal and professional challenges facing teachers in times of significant curriculum change (Apple, 1988; Cohen, 1988; Purpel & Shipiro, 1995; Bell & Gilbert, 1996; Windschitl, 2002; Nuthall, 2005). These include: grasping and managing new concepts and beliefs; developing more constructivist and enactivist pedagogies; changing the culture of learning in the classroom; and winning political battles to convince education leadership, colleagues and parents of the value of new ideas and approaches. While some of these have been covered in detail earlier, others require further discussion here.

Evidence presented in Chapters 5 and 6 suggests that the VCoP to TPDL approach challenged participants, and extended their understanding of key concepts of values and perspectives in the Social Sciences. The discussion contributions reported in Chapters 5 and 6 provide ample evidence of this. In Chapter 7 the analysis of focus group discussion and questionnaire responses showed a high level of positive comment about how much knowledge participants had gained and the extent to which this had changed their thinking and practice.

There is also strong evidence showing that many participants were able to develop and use a much wider range of teaching strategies, including ones with constructivist and experiential foci. The dialogue quotations in Chapters 5 and 6 support Bell & Gilbert's (1996) finding on the importance of anecdotal stories in changing teachers' understanding and beliefs. There were numerous occasions throughout all modules when teachers expressed surprise and gratitude at the range of thoughts, ideas and strategies reported by their co-participants. Focus

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group and written questionnaire responses were strongly positive about the value of the sharing of ideas and activities within the modules. Similarly, the comments expressed about the community of practice approach to professional learning highlighted the importance of sharing craft and practical knowledge, as discussed earlier in this chapter.

While this study does not have as strong a focus on what happened in classrooms, there were some very positive reports about the effect of the modules on changes in the culture of learning in classrooms. Many participants mentioned that they felt they had improved their teaching by making the following changes: listening to students' views more often and giving students greater voice; focusing on dialogue and discussion rather than debate; and making values and perspectives a much stronger aspect of their topics and how topics were planned and taught. Similarly, his study did not have any particular focus on the politics of convincing education leadership, colleagues and parents of the value of new ideas and approaches. However, there was evidence that where in-school leadership was very supportive, and where groups of people in the same school worked together and created time to work together, the approach worked effectively, especially in the experience reported in some detail in Chapter 6.

Developing and implementing professional development strong enough and persistent enough to meet the challenges of developing new teacher understanding, pedagogies, classroom learning cultures, as well as convincing powerbrokers of the worth of the approach, is a difficult task. However, many have pointed toward ways and means of achieving this (Bell & Gilbert, 1996; Putnam & Borko, 1997; ERO, 2000; Bishop, Berryman, Tiakiwai & Richardson, 2003; Ham, 2005). These studies suggest that such TPDL should recognise and respond to: the constructed nature of knowledge and beliefs, and the importance of personal thought and reflection about them; the social and distributed nature of cognition; the situated nature of cognition; and the importance of ongoing professional development which allows sufficient time for these three elements to be worked through. The overall design of this study sought to lock these features into a 12 – 15 week VCoP.

The construction of the approach was strongly influenced by the literatures of constructivism, socio-cultural learning, situated learning theory, and ALAR. These influences have informed the shape of the approach and the implementation of it. The results presented in Chapters 5-7 show that teachers, by and large, responded very well to the opportunity to work as a community of practice, where the nature of knowledge and beliefs was questioned

and debated and where personal thought and reflection was required. The extended opportunities for online discussion and the willingness of many teachers to use a comment-question-respond approach within these discussions ensured that social and distributed cognition was invoked. The approach was also structured in a way that related directly to the current classroom situations of the participants. Participants were asked to transfer some learning from the module directly into classroom practice, thus ensuring that learning was strongly situated in the context of their practice. Thus it seems that the findings have confirmed the importance of these key professional development issues, and that this approach was a successful way of conducting VCoP for TPDL that addresses the issues covered above.

Evaluating the Approach against the research questions

In the opening chapter, one main research question and a number of related secondary research questions were outlined. This section discusses some of the answers to these questions, as evident in the findings. The approach here is to examine each of the six secondary questions first, and then to discuss the main question in the light of the sub-questions and other considerations outlined in other parts of this chapter.

Engagement of teachers

The first questioned asked, "can a meso-scale VCoP for TPDL approach go deep enough to deal with issues in a way that will ensure underpinning reasons, purposes, and assumptions in major changes in curriculum direction are fully addressed?" Data presented in Chapters 5-7 confirm that the approach resulted in the formation of deeper knowledge and understanding about values exploration and geographic perspectives. Many participants mentioned, in spontaneous responses, that they were finding themselves thinking and working at a deeper and more challenging level than usual. The final reflection questionnaire results and the module texts confirm that the approach influenced the thinking and practice of most participants. A number of aspects of the approach clearly assisted in deepening the level of thought and reflection of participants. The readings were more demanding and contained more thought provoking material than teachers normally meet in their day to day work. Teachers' professional reading normally consists of school text books, students' writing,

administration information, and teaching guides. It is relatively rare for teachers to read at the more challenging level of educational professional or subject discipline academic literature (Kwakman, 2003).

One of the findings of this research is that teachers who were encouraged to engage in more academic reading could and did engage with more challenging professional reading, when it was part of a planned and purposeful activity. It appears to have influenced them to become better teachers of the fields studied. However, the nature of the reading needed to be well planned, carefully structured and attractively presented. One of the important features of the VCoP approach to TPDL is that it provided mediated and targeted reading over time. The targeted nature of the reading meant teachers did not have to trawl through a large body of reading to get helpful ideas. The modules in this study focused on reading of immediate relevance in understanding and teaching a complex aspect of current curricula. Teachers were also asked to do some direct teaching in relation to values and perspectives, and this also helped make the reading relevant and purposeful.

The readings were mediated in two distinct ways. First, teachers were given assistance with the reading through carefully designed reading tasks. This gave them a context and a direction for the reading. Second, the readings themselves were often extracts rather than full articles or papers. This was a way of breaking down the reading load of the approach. Again many found this type of reading helpful. On the other hand a number still found the reading difficult and considered that it needed even further chunking down. Not only was the level of thinking and work that took place in these modules deeper and more challenging than in other kinds of TPDL teachers regularly did, but it was sustained over a longer period of time than is usually the case. Teachers in this approach were required to think and act, in some depth, about one major issue in their teaching over a 12 to 15 week timeframe. This is a much longer period than the TPDL normally experienced by teachers. The findings show clearly, both in the spontaneous comments teachers made, and in the reflective questionnaire results, that this longer time frame was regarded as helpful and effective.

Data reported in Chapters 5 and 6 show the VCoP-TPDL approach could get teachers to think in-depth, ask and answer questions, and debate issues in ways that examine underpinning reasons, purposes and assumptions both of curriculum change and of their own attitudes and beliefs teaching.

Degree of fit with teachers and schools

The second question inquired, "can a meso-scale VCoP approach 'fit with' school and classroom culture and practices?" The answer to this question has already been indicated at a number of points in this chapter. It can, provided it is done in an appropriate and considered way. Participants need to be well managed and carefully guided as they work their way into the process employed in this approach. Further, the process needs to be flexible enough to allow teachers to find a way of working the module into their busy and demanding lives in the way that best suits their circumstances. The findings of this study show that teachers found different ways to make this type of TPDL work for them. Some worked around the edges of their normal working day. Some completed the bulk of their module work in weekends or school holidays. Others asked for and/or created space for the module work within their normal working day. In a small number of cases departments build the modules into a targeted professional development experience within their normal weekly departmental routines. Teachers are, by and large, dedicated professionals and it was interesting to note the way the VCoP approach to TPDL became an integral part of their professional lives for the life of the module. An example of this is the mention a number made of staffroom and workroom conversations about the module work.

A suggestion that I would make on the basis of this research is that the various options and approaches to developing a means of fitting module work in, is openly and fully discussed with participants at the outset. This provides teachers and subject departments with a range of strategies for making the space for this type of TPDL. Further, school principals, school advisors and the Ministry of Education should be made aware of these findings. It would appear that where people know about and identify with the goals, procedures and benefits of a VCoP approach to TPDL, they will create ways of allowing the process to happen by making changes to school processes and procedures that will assist participants.

Development of a 'strong' community

"Can a reasonably strong community of practice be developed in the relatively short time frame of a meso-scale VCoP approach to TPDL approach?" Chapman et al. (2005) in their work in the Taking Heads and Virtual Heads communities have identified a strong community as one where participants: make reference to the contribution of others; engage in

discussion, dialogue, debate and mentoring; lobby and propose action (p. 227). Evidence presented in the results chapters suggests that the VCoP approach to TPDL developed a relatively strong community of practice especially in the first two items Chapman et al. discuss. However, the results were mixed. Different people reacted in different ways. In particular there was clear evidence of what might be called leaders (core members), solid citizens (active members), and marginal and late comer participants (peripheral participants). Such differences can be problematic and raise issues for the application of CoPs to teacher professional development and learning.

One issue here is whether or not a TPDL programme can allow individuals to perform in different ways that suit their learning preferences and their personal and professional circumstances. Many VCoPs allow for these aspects and see them as normal and expected. TPDL, however, is not usually approached in this way. There is usually an expectation that all teachers will participate and perform uniformly to a given level. So, can TPDL programmes tolerate lurkers? There is clear evidence in this study that lurkers (those who watch and observe more often than they take an active part in discussion) can gain considerable benefits from VCoP style TPDL. Further, Wenger and Lave (1991) argue that some need to be silent and peripheral for a time until they gain enough knowledge to become more active. Unfortunately this kind of participation, while beneficial for individual teachers - and in all probability for the wider profession - does not actually conform to the ideal of a fully cooperating VCoP for TPDL as developed for this study. Individuals are able to benefit, but the wider community of the VCoP and the other individuals who participated in a different way, do not gain much benefit from lurkers or come-lately participants. Further, this study shows that in a teaching context some individuals very new to the profession can become actively involved in a CoP in a very short space of time. It also shows that with encouragement and support newcomers can transition to active practitioners in a relatively short time. However, where this happened the inexperienced were either well qualified in their content knowledge of the field, and/or were part of a supportive nested community. Where inexperienced individuals were unfamiliar with the field of Social Science teaching in New Zealand, or did not have the support of a strong local nested CoP, the approach was often not so successful.

This in turn raises the question as to whether it is possible to offer different pathways within in VCoPs. That is, is it possible to have higher engagement and lower engagement

pathways within modules? Is a lower engagement pathway more realistic for some teachers? Could this be a way of enabling a greater number of teachers to experience in-depth or at least moderate-depth TPDL? These are options that could be assessed in further development of the approach and in further research, and this matter is addressed in Chapter 9. It can be argued that if CoPs are to be effective for a wide range of teachers, rather than just able and committed elites, they need to be structured and run in ways quite different from some of the more successful business approaches to CoPs. Further experimentation with variations of the VCoP approach to TPDL, as suggested above, is needed.

The viability of the approach

"Is such an approach viable and workable in design and delivery terms?" The evidence suggests that the answer to this question is a qualified yes. The findings in this study suggest that making the approach truly viable and workable across the full range of teachers is complex and involves careful planning and meticulous implementation. There are a number of issues which require further work and development in order to ensure that robust design and delivery structures and processes for VCoPs for TPDL provide for a full range of school and teacher environments. The evidence suggests that this goal of catering for diversity is worth pursuing, and that in all likelihood education and school-based VCoPs can be as successful as business-based CoPs have proven to be. However, it needs to be recognised that the teacher diversity referred to may mean a greater challenge in establishing viable VCoPs for teachers. Also, what works in business will not necessarily work for teachers and particularly not for TPDL. The contexts and the work are different across these two environments. VCoPs for ordinary teachers need to be designed and run in ways specific to the realities of schools and the working situation of classroom teachers.

One of the most promising avenues for further development resulting from evidence in this study is the potential that appears evident in the two-tiered nested CoP structure used in two schools within the study. That is, it would appear that a CoP structure that combines an online regional or national VCoP with a school-based face-to-face CoP is probably a very good approach for the CoPs in a school environment. There are a number of reasons for this. A school-based CoP formalises the CoP process in the school. It is likely to mean school leaders are aware of and supportive of the CoP experiment in the school. This in turn is likely to mean that teachers are provided with some normal working time to engage in CoP and

VCoP activities which would immediately resolve some of the key problems a number of teachers in this study faced. That is, finding enough quality time to complete the modules in reasonable depth.

Further, this structure adds to the value of school-based TPDL by linking it to the activities of the wider VCoP. Evidence presented in this study suggests that professional benefits could accrue if teachers are granted some school or department time to engage in regional or national VCoPs alongside their own school-based TPDL.

Teachers' reaction to the VCoP approach to TPDL

"Will teachers see such an approach as an interesting, challenging and practical method of professional development?" Again, while not all of the participants saw the approach in these terms, the data presented in Chapters 5-7 suggest that the majority did. Issues of challenge, motivation, relevance and practicability have all been discussed earlier in this chapter. While a small number of individuals did not see the approach as positive in all these areas, the findings suggest that most were challenged and interested. The findings also showed that many valued the practical and situated nature of the approach and gained a great deal from their involvement in the approach. A small number were lost early in the life of the modules before the real benefits of sharing thoughts, ideas and strategies became more evident. Clearly, there is a need to re-examine the way participants experience the earliest parts of the approach, to see if this issue can be better addressed in the structure and process of the earlier parts of modules.

Changes in thinking and practice

"Can a meso-scale VCoP approach to TPDL approach be designed and run in a way that results in changes in the thinking and practice of teachers?" Again, in most cases it appears that teachers' thinking and practice did, indeed, change. This has been fully discussed above in the review of evidence in applying Gusky's method of evaluating TPDL, and is not discussed any further here. This brings us to the point where the main research question can be addressed.

Social Science classroom practitioners and complex curriculum change?

The main research question asked, "Can a virtual community of practice approach to teacher professional development provide an effective means of assisting Social Science classroom practitioners to implement complex curriculum change?"

The narratives outlined in Chapters 5-7 provide rich data that lead to insights into the way three groups of teachers responded to the VCoP approach to TPDL. The evidence shows that most of those involved responded very positively to the approach and found the VCoP approach to TPDL most worthwhile. However, the main research question requires more. The question is focussed upon whether there is any evidence in the results that suggests that the participants have been assisted in implementing complex curriculum change which examines values and perspectives. Therefore, it goes beyond merely responding positively.

There were many instances in the module narratives of participants making comments that indicated the approach was having an immediate impact in their classroom work. Examples were:

- a shift from debate to dialogue pedagogies
- picking up on and implementing ideas suggested by other participants
- the formal request that they trial a new idea from the module in their classroom

Questionnaire results in Chapter 7 reveal what had happened in the weeks and months after the module work had been completed. The results confirm that 48% of the respondents considered their thinking had been influenced "to some extent", 29% "quite a lot" and 10% "a great deal". Further 43% reported that their module work had influenced their classroom practice "to some extent" and 33% considered there had been "quite a lot" of influence. In addition, illustrative comments reported in Chapters 5-7 show the approach helped participants understand complex new ideas introduced in recent curriculum change and to implement new teaching strategies consistent with the changes.

Conclusion

The discussion in this chapter indicates that the meso-scale VCoP approach to TPDL investigated in this study is, in general, viable and workable. However, the VCoP approach to TPDL is not a simple panacea for all TPDL ills. Careful design and strong active facilitation are needed if the approach is to work with a diverse range of teachers. One of the most important findings is that educational VCoPs for the TPDL of the general teacher is a unique field and requires VCoPs specifically designed and operated in a way that fits with the field. Findings show that while the approach was successful in most areas, there were aspects that required for further work and investigation. These are addressed in the final chapter.

The VCoP approach to TPDL appears to have real potential to improve the quality of TPDL for teachers because it addressed the issue of quality virtual teacher professional development in seven important ways. It:

- provides teachers with mediated up-to-date knowledge and skills
- creates sufficient time and depth of thinking to allow teachers to work through beliefs and attitudes
- matches theory to practice and requires teachers to ground new learning in their own classrooms
- provides opportunities for teachers to interact with and benefit from regional and national expertise in a meaningful way
- is able to boost teacher confidence and ability in unfamiliar/difficult fields
- is flexible enough to fit with the complexity of teachers' busy professional lives
- provides distributed TPDL that offered a means of marrying local school-based TPDL with national TPDL

The virtual community of practice approach to teacher professional development was able to provide an effective means of assisting Social Science classroom practitioners to implement complex curriculum change in the instance of this study. The evidence from this study is such that it appears the approach is viable, and valued by teachers.

Chapter Nine - Conclusion

Introduction

This study set out to develop an approach for a Virtual Community of Practice-based approach (VCoP) to teacher professional development and learning (TPDL). It began by researching the research literature s of communities of practice, community-based learning theory, professional development and online (virtual) learning, as reported in Chapter 2. Research methods literature was also reviewed, and a mixed-method, grounded research and action learning action research methodology was selected and planned (Chapter 3).

The study developed a VCoP approach, as described in Chapter 4, integrating key features of the research literature s on online teaching and learning communities, and implemented it in three modules. As the modules progressed, I observed, analysed and reflected on the degree to which the approach met its objectives. Using an ALAR process, the approach was adjusted and modified throughout the study in an attempt to improve the efficacy of the approach. Data drawn from three modules using the approach were analysed in detail and the results reported in Chapters 5, 6 and 7. Then in Chapter 8, through a process of reflective analysis, the approach itself and the key outcomes of the research were discussed and evaluated.

In this final chapter I move beyond the discussion of Chapters 5-8 and reflect in a more contemplative way on the meaning and significance of the research as a whole and its implications for the future. The limitations of the study are also discussed, and finally suggestions for further research and development are advanced.

Balancing and blending

Wing-Lai et al. (2006) note that online communities of practice have enormous potential as a powerful method for teacher professional development. They suggest that this is because they:

- involve "a shift in emphasis from formal training to learning in practice"

- go beyond the "traditional 'one shot' and 'face-to-face' models of event-based, expert-novice forms of professional development"

- "allow teachers to act as co-producers of knowledge" and take "greater responsibility for professional growth"

<div align="right">(Wing et al., 2006, p. 22)</div>

Yet, they also observe that, "currently communities are only infrequently used for teacher professional development" (p. 22). There are a number of reasons why this is the case, but this study suggests that foremost among them is the lack of a robust approach on which to base workable VCoPs for practising classroom teachers. If the promise of effective online professional development for teachers is to become a reality, an approach that *blends* the principles of both teachers' professional learning and development, and online communities of practice, will be required. It will also require striking an appropriate *balance* between the dualities and tensions inherent with an activity system or VCoP (Engestrom, 1987; Wenger, 1998). Achieving the appropriate blend and balancing of complex variables within specific types of VCoPs (in the case of this research a meso-scale VCoP for teacher professional development and learning) is also important (Dubé et al., 2006). I suggest that this research has gone some distance in identifying the appropriate blend and balance needed in teacher focused VCoPs. This research concurs with the view that each VCoP has its own personality (Bourhis et al., 2005). This research highlights the fact that those who lead teacher VCoPs need to understand and manage the blending and balancing required in any given VCoP, with its particular focus and unique mix of individuals.

The rich research literature of effective professional learning and development for teachers provides ample empirical evidence on what is needed to ensure successful TPDL. However, this research reinforces the view that the key principles from TPDL research literature should be considered as paramount, and the less developed field of VCoP theory should support rather than lead developments. In other words, in the case of VCoPs for TPDL, VCoP theory and practice needs to be blended into quality TPDL, and not the reverse (Watson, 2001; Schlager & Fusco, 2003).

Blending a VCoP approach into the field of TPDL can provide teachers with mediated, easily assimilated, yet challenging professional reading. Busy classroom teachers do not

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normally have time to organise such reading. Carefully chosen professional reading can be used as the raw material for thinking and discussion in an online environment. The key in this approach is the use of dialogue community tools to construct a discussion environment capable of enriching and deepening teacher knowledge and understanding of key educational issues. The online discussion environment established in the modules in this study provided a structured forum for teachers to discuss readings and to relate them to their own experience. As this approach developed, structured and scaffolded experiences resulted in teachers constructing, trialling, observing, reflecting on and discussing their own classroom experimentation with new ideas. The key elements of this approach are all consistent with the major principles of quality TPDL.

The approach is also based firmly on principles that are strongly associated with community of practice literature. This study argues that two key aspects of classic VCoPs must be specifically tailored to a teaching and school education context. Firstly the life-cycle of CoPs needs to be shortened, and second the scope of the action inside the CoP needs to be more strongly scaffolded, and simpler. There needs to be a break from the view that VCoPs must be evolutionary, and an acceptance that VCoPs can also be structured and managed from without. The need for clear recognition of these adaptations to the classic VCoP approach in teacher oriented VCoPs is another implication of this research.

Arguing that the key focus in this approach is on TPDL, rather than on the more technically oriented aspect of VCoP perhaps undervalues the significance of the VCoP approach in fostering teacher efficacy with ICTs. Research has shown that many teachers are reluctant to engage with ICTs in their work (Twigg, 2001; Morris, 2003; Bennett, 2007). In the approach developed in this study, a quality TPDL opportunity in a topic area of concern to Social Science teachers is offered through a mediated VCoP. In the style of VCoP advocated in this approach, online teaching and learning technologies are a means to an end, not an end in itself. The whole concept of a CoP is introduced as a highly collegial and non-threatening experience, where all are accepted and will gain strong support, help and encouragement. This study suggests that this approach can engage those who are normally reluctant to use ICTs, perhaps because they are able to see that their ability with technology is not at issue in this approach. Moreover, this may be an environment where they might be able to succeed and learn more about using ICTs in teaching as they go. Thus while this approach

does not specifically set out to do so, it appears to have the potential to draw Social Science teachers toward ICT literacy.

The question of balance in the development and operation of VCoPs is also an important issue. As discussed in Chapter 2, and later in this chapter, it is recognised that there are tensions and dualities at play in VCoPs and these are clearly evident in this study. However, two dualities not included in Wenger's writing have proven to be important in the VCoPs in this study. First, the face-to-face/online duality identified by Barab et al. (2003) has been an important issue for participants in this study, and this has been discussed fully elsewhere. However, another duality has also emerged. This duality, the personal/professional dichotomy is, to my knowledge, a new idea in the discussion of VCoPs. This is not a new idea as such. Bell and Gilbert (1996) have addressed this phenomenon in a face-to-face context, but not in relation to VCoPs.

There are a number of dimensions to the issue of a personal/professional duality in this study. First, there is a clear difference in how personal and professional motivations appeared to play out. Some participants noted that their motivation in taking part in the modules was purely personal. They were not involved in the module because they were required to meet professional development obligations. They stated they wanted to complete the modules because they personally wanted to know more, and they personally wanted to become better teachers of values and perspectives in the Social Sciences. However, others indicated they were taking part in the module because of professional requirements. Some were required to participate because of their involvement in the Beacon Project. Others were in the modules because their subject department leader felt it was a good idea (to meet the department's professional development goals).

Second, I set up the modules, and marketed them, as fee-paying PD modules leading to a professional development certificate on completion. The first was done partly to recover costs, but also partly to give the modules credibility by appealing to an 'I (we) have to pay for this so I (we) will get value from it' kind of reasoning. The second was done to provide a small professional incentive, 'I can use this on my CV or in a professional development statement for my appraisal'.

The contrasting reasons and motives above raise tensions. Do we run professional development VCoPs as a means of fulfilling professional obligations, or as a means of achieving personal satisfaction as a teacher? Should some kind of credential be on offer, or should such modules be entirely for personal development? Does it make any difference? Will having people engaged in both kinds of ways be a problem? The evidence from this study is that, by and large, both kinds of participants worked together happily and there were no major issues. However, it may be that some of those who wanted shorter, more directive modules were professionally motivated with an 'I have to do this and I need to get it over and done with' attitude. Those who were happy with longer and more flexible modules may have been more personally motivated with an, 'I am happy doing this, it is rewarding and fulfilling, and I am happy to go on doing it over a longish period of time' attitude. If this is the case then there is a real dualism in teacher focussed VCoPs.

Another aspect of this issue is that there is evidence in the study to show that some participants appear to have started out in the module purely for professional reasons, but then changed as the module unfolded. Such individuals appear to have started a little grudgingly but then found the whole process much more engaging, interesting and valuable than they had anticipated. As this occurred they were drawn in and began to feel personally enriched by the module experience. As a result their motivation for continuing in the module changed, and became closer to the personal end of the personal/professional duality. This possibility of a sixth duality and the questions it raises deserve further thought and investigation.

Thesis and theory

The central thesis of this study is that a meso-scale VCoP approach to TPDL is workable and offers considerable promise as a viable option for effective professional development of teachers. While the setting for exploring this thesis has been values and perspectives in Social Science education in New Zealand secondary schools, I suggest this approach could be applied in any curriculum area. However, this study has also been an exploration of how theory plays out in practice. As a result there are valid observations that can and should be made in relation to theory.

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In theory terms this study is predominantly based in the socio-cultural (Gredler, 2003; Reusser, 2004) situated learning/community of practice (Lave & Wenger, 1991; Wenger, 1998) and action theory (Engestrom, 1987) traditions. It is in relation to these theories, as applied to teacher professional development in an online environment, that the study has some clear messages for in-service teacher education and education policy makers. First, the study suggests that conceptualising teacher learning as well functioning communities of knowers and communities of practice is a powerful means of achieving effective TPDL. The second is that for a communities of knowers or communities of practice orientation to succeed, many of the six key principles of activity theory (Engestrom, 1987) will need to be in place. The study suggests that the 'tools' of the approach - the organizing concepts and methods - need to be clearly introduced and discussed in the early stages of a VCoP for TPDL. This also involves establishing early the underpinning ground 'rules' and procedural values. Similarly 'community', the social or community dimension of VCoPs, needs to be intentionally fostered and maintained throughout. The study did not begin with firm ideas about the importance of carefully considering the 'division of labour' dimension of VCoPs - the unique entities and the different roles participants play - but it certainly ended by acknowledging these are indeed very important.

The study also found that Wenger's concepts of; participation, reification, boundary, boundary object, broker, overlapping communities, mutual engagement, joint enterprise and shared repertoire (refer to pages 30-41) are very helpful in thinking about how VCoPs for TPDL can work most effectively. I recommend that anyone charged with the responsibility of leading or facilitating VCoPs for TPDL is thoroughly familiar with these ideas. The study has illustrated in some detail how important leadership and facilitation is; as a consequence, another strong recommendation is that some form of education and training for potential VCoP for TPDL leadership and facilitation is needed if the potential of such communities is to be realised in New Zealand education.

Thus while this study does not propose new theory it does articulate, in an under researched field, the subtleties of the underpinning theories in teacher focused VCoPs. The study is a practical illustration of pitching teacher VCoPs strongly in socio-cultural and activity theory frame, and it provides practical examples of how this can be done.

Limitations

While there is much to be positive about in the outcomes of this study, there are a number of limitations that need to be acknowledged and discussed. Issues concerning the size and recruitment of the sample, the representativeness of the sample, obligations on participants to complete, and the role of the participant researcher all need to be addressed.

This study is a relatively small and highly specific one. Two of the modules had small numbers of participants, and even the third, with 23 members, was not a large group. With such a small sample, and some unusual aspects to the sample recruitment process, the population involved in this study cannot be considered as fully representative of all New Zealand secondary Social Science teachers. The small size of the module samples also raises the question of scalability. The research literature suggests that often small scale experimental studies cannot be applied widely in education unless they are both scalable and sustainable. Thus the innovation must be:

> "[U]seable (and used) by a broad range of actors at the targeted levels of the school system, and it must be useable over the long term, without the kinds of targeted (and expensive) support that normally accompany the early, 'experimental', rollout or introductory phases of an innovation".
>
> <div align="right">Fishman, Solway, Krajcik, Marks & Blumenfeld (2001, p. 5)</div>

As this study is small scale, specific and experimental, there is always a risk that it could be difficult to scale up and sustain broadly across the school system. However, the 'low-tech' and relatively low-cost nature of the approach, and the fact it has been developed closely and flexibly with teachers in a range of contexts, means it is probably more scalable and sustainable than many studies. There is, however, a caveat here. Findings have shown that having a quality facilitation processes is very important in successful VCoPs for TPDL. This means either ensuring a quality facilitator is involved for a reasonable number of hours each week, or ensuring the community itself develops quality leadership within its ranks. Both options have significant resource implications. These issues need to be investigated further in future research.

Participants joined the sample in a number of different ways, as outlined in Chapter 3. Some were 'free will - opt in' participants, others were teachers enrolled as part of a department head's decision, others were directed in as part of their school's involvement in the Social Studies Beacon School Project, and yet others were school advisors encouraged to take part by their employee, the Ministry of Education.

There are two issues here. Firstly, the involvement of Beacon schools and advisors means it is fair to say that the population in the module was probably biased toward the more capable and more competent Social Science teachers and educators. On the other hand, in a number of cases whole school departments with a full range of teachers – from expert to novices – were involved, providing a good spread of participants. Second, because some were enrolled in modules at the behest of their employers, participants may have felt more obliged to hang in and complete the module than if they made a personal decision to take part. Most appeared to have been happy to be involved, although some did see their required involvement as 'a bridge too far', and subsequently withdrew. These instances have been acknowledged at appropriate points in the study. However, while this has been explained as a limitation here, it could also be seen as a positive finding, that more formal structures such as purpose-based school, subject or department-based TPDL will tend to be more effective than 'wholesale' professional development.

A third limitation is the fact that I was the leader, coordinator and facilitator of the professional development module and the online community throughout the study. This created the potential for me to manipulate and organize the study. It could also have created a reluctance for participants to be fully open, knowing that the researcher is also the awarder of the completion certificates that teachers needed to fulfil contractual obligations to school and department administrators. Participant research is, however, fully accepted as legitimate within the qualitative mixed methods research paradigm used in this study. Further, I was careful to ensure a high degree of professionalism, and made every effort to ensure participants always felt comfortable with the research process and the whole module experience.

It could also be argued, as a potential fourth limitation, that the approach had a number of unusual characteristics that biased it towards success. It follows closely key principles of quality professional development and professional learning (Chapter 2, p. 9-16); socio-

cultural theory, particularly as expressed in community of practice theory (Chapter 2, p. 16-22); community approaches to learning, and in particular, communities of practice (Chapter 2, p. 22-31); and online mediated professional development (Chapter 2, p. 31-35). Further there was a bias in the sample toward a greater representation of higher level practitioners than in the normal school population. On the other hand, it can be argued that the principal aim of online education is to develop modules that are likely to achieve success through good design and processes. It also needs to be said that combining ideas from complex and distinctive fields into an understandable approach that could work with busy teachers was a real challenge. To identify the appropriate components for a quality online learning approach and to build an implementation framework was, in many ways, the easy part of this study. To apply the approach with groups of teachers, and to get it running in a way that would actually work to produce the benefits promised in the literature was the acid test for this study.

Looking more closely at the composition of the module groups, it can also be argued that rather than being biased toward the more capable, the module communities in the VEP1 and VEP2 rounds in particular, can be seen as well balanced VCoP communities. The research literature notes that quality VCoPs need to have a good number of leaders and top people working alongside a mix of less experienced colleagues. It is precisely this collegial working together of mixed groups of people that is effective in raising the standard of practice for all.

Implications for further research and development

This study has developed what appears to be a viable approach, with the potential to move from the promise of VCoPs for TPDL to the reality of achieving it. There are a number of points at which the implications of the findings of this research need to be considered in more depth. These are in areas where important new perspectives on VCoPs for TPDL have been developed.

This study provides strong support for, and evidence about, two dualities beyond the four identified by Wenger (1998) and Engestrom (1987); namely, the face-to-face/online duality suggested by Barab et al. (2003), and a new sixth duality (personal/professional). These dualities require further study and debate. Another important contribution of this study to the VCoP field is its specific evidence on the key role of facilitation. While other studies have

highlighted the importance of facilitation (McDermott, 2001; Bourhis et al., 2005) little is known about the 'nuts and bolts' of the facilitation of VCoPs (Bourhis et al, p. 33). This study has provided considerable detail on the nature of the facilitation process. The evidence is that the facilitators of TPDL focused VCoPs need to be very proactive and multi-skilled. Participants need on-going, prompt and specific feedback, support and encouragement. While others participants can do this, it may not always happen, or it may not be sufficient, and the facilitator must act quickly when this is the case. Because the teachers in a VCoPs will vary in experience, skill, learning style, personal circumstances and personality, the facilitator also needs to be very aware of how to best relate to and work with each individual. A key consideration is the way the facilitator manages this diversity to ensure all participants feel safe and valued, and intervenes promptly and sensitively when action is needed to ensure this. The facilitator in a teacher focused VCoP is not just a discussion leader but also a coach and a mentor. This study provides detail on the way a facilitator can operate to achieve these important roles and tasks. The evidence presented in this study suggests that these requirements were met in the facilitation of this TPDL project.

There have a number of less than successful attempts to encourage teachers in New Zealand to use VCoPs for TPDL (Hipkins, 2003; Ham, 2005). Evidence presented in this study has shown that a meso-scale virtual community of practice-based approach that blends together the key principles of TPDL and VCoPs could result in much better results in the future. However, there are a number of unresolved or partially resolved issues outstanding.

- Could this approach, in its current configuration, work with a larger group or groups? If, for example, 80 – 100 teachers were enrolled in a module could the approach work in the same way as outlined here, or would it have to become more like a classic larger scale VCoP? Would a full-time rather than a part-time facilitator/leader be needed? Would subdividing a group into a number of sub-groups change the way the approach works? Could a number of groups of 20 -30 (similar to the third module) work at the same time, using separate facilitator/leaders? Could a number of facilitator/leaders with sufficient skill and experience be found? If they were available, how much would quality facilitation cost? Would ensuring quality facilitation be economically viable?

- Can problematic aspects of the approach be resolved? Findings suggest that some aspects of the approach need more work. For example, different components need refining or slimming down in order to create more time for in-class trialling, or more of what the teachers called 'chunking down'. How far can chunking down go before it becomes watering down? How far can the reading and responses to the reading be reduced without compromising the need for teachers to understand some of the complexities of the knowledge and processes involved in teaching challenging aspects of the curriculum? Will simplification of online exercises and discussions result in insufficient dialogue to really work through the issues?

- Can viable options for different ways of engaging be established? More study is needed to investigate how to create space for different ways of engaging, while at the same time maintaining a sense of shared community. Can we allow for the widely different ways of engaging used in module three and still get 'early-bird' participants to put in the 'hard yards', knowing that some in the group may not respond as quickly as the early-birds would prefer? Is it possible to have 'quick-fire' and 'slow-mover' pathways in the same module? Alternatively would it be better to have quite different community groups using these different timing approaches?

- Would it be best to run all teacher VCoPs for TPDL as nested communities? The nested approach to VCoPs for TPDL showed promise as a very strong method of VCoP approach to TPDL, particularly in the third module. Should TPDL of this type seek to combine distributed and face-to face groupings in the same module? Should most modules be run entirely on the basis of local school sub-groups nested within a national distributed VCoP? Or, should national distributed VCoPs contain nested regional clusters that hold one or two face-to-face meetings, one early and one late in a module? Evidence from this study and literature suggests a nested approach will assist with scalability and sustainability issues. This prospect requires further research and trialling.

So, while a basic approach for effective distributed VCoPs has been developed in this study, there a number of areas for improvement and further investigation needed before there can be full confidence in the approach as suitable for widespread use as a key means of

TPDL. Findings suggest there is enough promise shown in this study to encourage major players in TPDL such as the Ministry of Education, teacher professional associations, and schools, to undertake such research as soon as possible, in order to evaluate this approach as a means of improving the scope and reach of high quality TPDL across the teaching force.
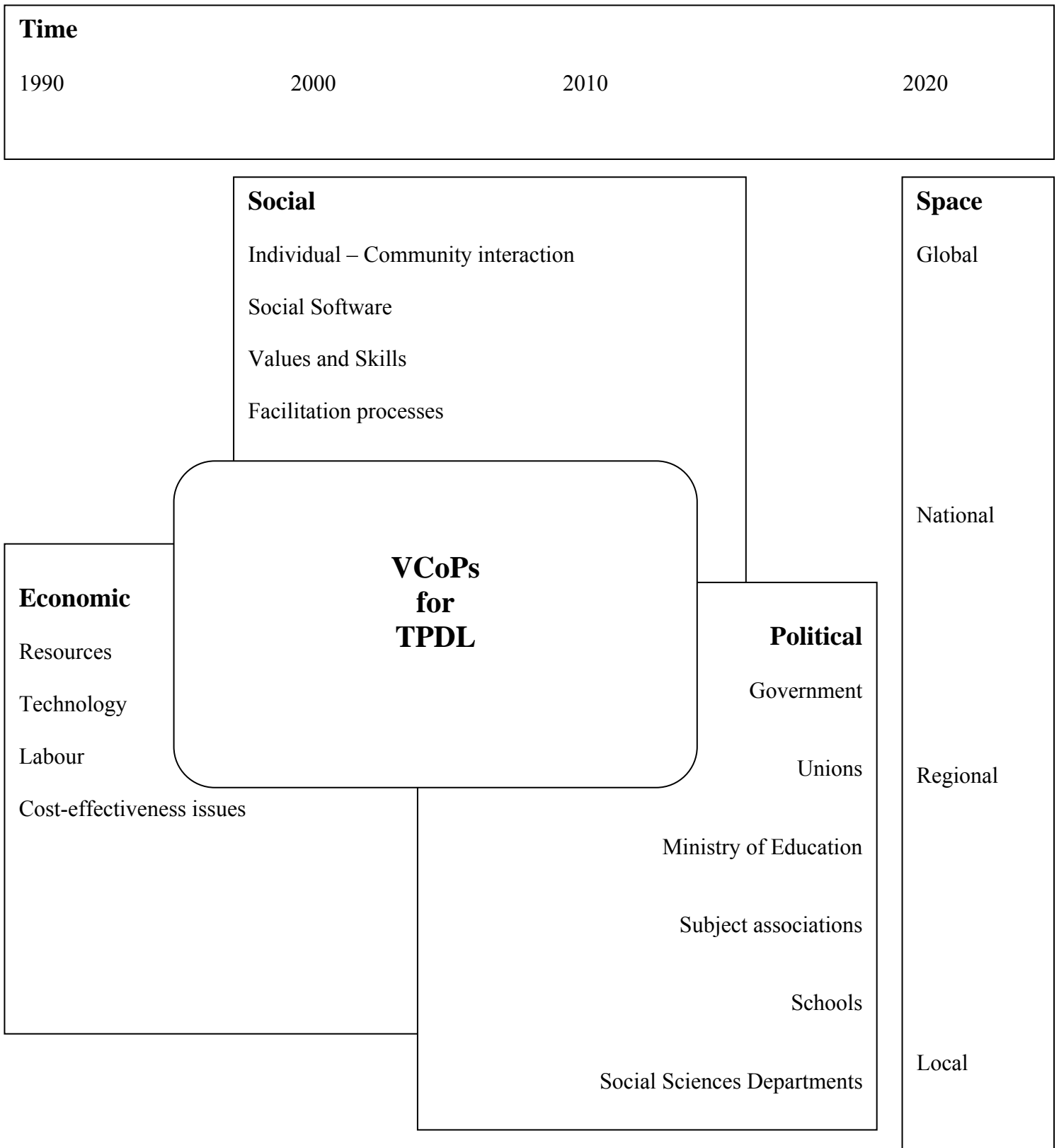
VCoPs for TPDL in a broader context

Any human activity can be viewed from a number of different perspectives. It can also be seen as positioned within a dynamic world shaped by complex interrelated forces and factors (Windschitl, 2002). Figure 17 attempts to view VCoPs for TPDL in such a way. The diagram places VCoPs for TPDL, and this study, within a time and space framework and as influenced by the interaction of political, economic and social forces.

VCoPs for TPDL have been possible since the early 1990s when the technology of virtual communities through LMS and other systems became readily available in education. The development of community based education theories (communities of inquiry, learning, and practice) were also becoming more established in education at that time. However, as with the adoption and utilisation of any new idea or technology, initially the uptake and development is slow. It has taken almost two decades to grow enough experience and infrastructure to make VCoPs a viable option for use as a mainstream professional development tool in school. Some might argue it is still not there yet. However, this study argues that the time is right for a significant push toward normalising the idea of VCoPs for TPDL.

This assertion raises the question: at what point in space and at what scale is it best to start? This study has worked predominantly at a national/regional level. It was open to anyone in New Zealand but mainly involved those located in the North Island. Some face-to-face sessions were possible for most participants in this study, and these sessions were regarded as very important to the success of the approach by those who attended them. Those who could not attend the sessions lamented the inability to meet face-to-face and, suggested it should be a compulsory part of future VCoP approach activities. There also signs that local communities nested with a regional or national VCoP offer many advantages. These findings

Figure 17 -The approach in context

Time

1990   2000   2010   2020

Social

Individual – Community interaction

Social Software

Values and Skills

Facilitation processes

Space

Global

National

Regional

Local

**VCoPs
for
TPDL**

Economic

Resources

Technology

Labour

Cost-effectiveness issues

Political

Government

Unions

Ministry of Education

Subject associations

Schools

Social Sciences Departments

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point toward local and regional based VCoPs as a starting point. However, national institutions could do much to support such initiatives.

Political considerations are always important in decision making. Some individuals or groups have to make the decision about what is desirable, affordable and practical. Some have to act on decisions made by planning, implementing and supporting the agreed direction. How should those involved in such decisions, in relation to VCoPs for TPDL for Social Sciences education in New Zealand schools, proceed? As Figure 17 indicates a wide variety of groups and individuals is involved, ranging from the Government to individual Social Science departments in local schools. In a New Zealand context the Ministry of Education has traditionally been a key player in deciding on and implementing new educational initiatives. The message to the Ministry from this research is that VCoPs for TPDL are desirable and practical, but will require a quality technical and facilitation infrastructure on the one hand and encouragement and support in schools on the other. However, I would also argue that the Ministry's 2007 curriculum provides strong encouragement to schools and communities to take a lead in deciding where they are going and how they will get there. "The national curriculum provides the framework and the common direction for schools ... It gives schools the scope, flexibility, and authority they need to design and shape their curriculum" (NZMoE, 2007, p 37). VCoPs using the approach outlined in this research could assist schools and groups of schools in establishing local and regional VCoPs to supplement any national initiatives organised centrally. Alternatively, as suggested above, schools and local communities might take the lead in forming their own VCoPs for school-based curriculum design and development, but would benefit greatly from national support from the Ministry.

The economic environment is always a major influence on what could, should and can happen. One of the driving economic considerations in the area of VCoPs for TPDL is the thought that they may be a cheaper means of delivering a more effective form of ongoing professional learning for teachers than our traditional ways of doing this. The current difficult economic climate may provide a stronger incentive to look seriously at VCoPs for TPDL. Indeed in the United States a push in this direction appears to be underway already (Davis, 2009). This study does, however, sound a note of caution. Evidence in this project has shown that the processes at work in a successful VCoP are both complex and subtle. The key to managing these nuances appears to be proactive and well judged leadership and facilitation.

After having begun this project surmising that the management and facilitation of a VCoP could be completed at low cost using one part-time facilitator, I am now having second thoughts. If the facilitator is supported by a strong and skilled leadership team of core participants with some experience in VCoPs, this could work. As discussed in Chapter 8 this would require starting a VCoP in a different way to that used in this study.

As experimentation with VCoPs for TPDL continues over the next decade, a cadre of potential VCoP core members and trained facilitators will be developed. As such skilled personnel emerge it will become easier to run VCoPs at low cost. But in the interim, while expertise is being developed, it may be necessary to employ a small number of skilled and experienced facilitators full time in order to develop a viable infrastructure of successful VCoPs for TPDL. Further, the high value that participants placed on having at least some face-to-face sessions means that if this is to be built into VCoPs for TPDL the cost factor could well increase significantly. Clearly the economics of VCoPs for TPDL is an important topic for further research.

Social factors are also important in the functioning of any enterprise. An interesting development in this area is the rapid growth in social software. Kalantzis and Cope (2008) note that "internet ecologies such as Myspace, YouTube, Facebook, Blogger, Flickr, Jigsaw and wikis are built on strongly collaborative social networks" (p. 223). The fact that many of the next generation of teachers are already immersed in such technologies means they are likely to find VCoPs to be a very natural form of TPDL. The strong expression of the need for some face-to-face sessions in any VCoP advanced by participants in this study is also a clear message that social considerations are vital in VCoPs. While participants valued the time-flexible, location-free nature of the virtual environment as a means of running an ongoing dimension to TPDL, they were adamant that quality relationships are best started in a face-to-face environment. The growth in low cost yet sophisticated social communication systems may play a role here in the near future. EVO, Skype and other desktop communication systems may soon allow teachers in distributed locations to meet together synchronously in a way that is very similar to a face-to-face mode. This is another area for further research and development.

The thesis of this study is that meso-scale VCoPs for TPDL are a viable and effective way to conduct quality ongoing professional development for teachers. It does not pretend that the

VCoPs approach to TPDL is a simple panacea for the TPDL problem. But I am suggesting that if there is the political will at local and/or national level to develop this approach to TPDL, there are strong social and technical capacities that could be harnessed. Economic forces and factors may favour such developments also. Further, this study has provided rich detail on how a VCoP approach for TPDL can work, and has identified areas for, and possible means of, significant improvement on what has been achieved in this study. I suggest that the wider contextual considerations discussed in this section suggest that VCoPs for TPDL will be an important part of teacher professional development by 2020. This study, and an extensive supporting literature, indicates that VCoPs for TPDL are a potentially fruitful direction that we should be pursuing actively. As Kalantzis and Cope (2008) note:

> The participatory web of the Internet produces a different type of sociality ... and one that is very well suited to the creation of innovative pedagogies and more powerful learner engagement. ... E-learning ecologies and social networking tools provide means to support peer learning within [environments such as Myspace, YouTube, Facebook or Moodle, EVO and Skype]. 'Co-creation' is a key in the new online environment – energetic horizontal communities that aren't constrained by rank. The logic of the co-construction of knowledge is a keystone both to the knowledge economy and to the new education that will support it.
>
> (Kalantzis & Cope, 2008, p. 223)

I argue that the approach explored in this project is very much in the spirit of the Kalantzis and Cope vision above. VCoP communities are in essence horizontal communities engaged in co-construction of knowledge about good teaching practice. There are further questions to be answered, as the suggestions for further research above indicate. However, it could be argued that chief among them is to ask: are teachers, schools, educational institutions and policy makers ready to commit to the use of VCoPs for TPDL as a key means of addressing the challenges of a 21st century curriculum and its emphasis on new learning?

Appendices

Appendix 1 – Quality Dialogue Assessment Tools

In order to assess the quality of the dialogue entries made by individuals as they participated in a module an eight point coding classification was developed. The eight categories or codes are based partly on literature, research and theory. However, they are based most strongly on the processes of unitisation and coding; domain analysis and constant comparison. A thorough reading and re-reading of the online data and the methods described above resulted in the formulation of a Monologue and Dialogue Discussion Analysis tool (MDDA). The coding classification is divided into two parts or domains.

Personal Monologue Statements (PMS)

The firstly domain identifies and describes substantive statements (main points/arguments) that are the personal opinion of the individual, or based on the individual's personal and profession experience and/or their own thinking, planning and action. These are labelled Personal "Monologue" Statements (PMS) as they are statements made in a monologue context. That is they are the made as a person view not as a comment on an idea posted by a fellow participant. Domain analysis suggests there are four different types of PMS statements:

- opinion statements based on personal experience (labelled in this analysis PMS1 statements); e.g. "Based on my experience as a teacher I think that ….

- interpretation and reporting statements drawing on the ideas of others – usually reported straight for provided readings (PMS2); e.g. "It seems to me that Smith (2000) suggests …."

- factual and reporting statements about activities, teaching strategies, and actions (PMS3); e.g. "In a recent class I tried ….."

- higher level personal interpretation, evaluation, reflection and application statements (PMS4). These are judged as higher level because they are more complex, more critical and often applied to a possible teaching context, e.g. Smith 2000 suggests …..

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I agreed that …. On the other hand I disagree with his idea that….. When I try that kind of thing ….." etc.

Interactive Dialogue Statements (IDS)

The second part or domain of the coding classification identifies and describes substantive statements that are specifically related to inter-active dialogue *between* members of the online community or interactive dialogue statements (IDS). Typically these statements provide feedback to other participants or invite others to participate further in the online dialogue in some way. Again there are four sub categories:

- general dialogue responses (IDS1) e.g. "Wow, what a lot of great ideas have come out in this discussion! Thanks everyone."
- general questions or stimulus statements (IDS2) e.g. "So far we seem to be suggestion …. But I wonder if the issue is really ….. What do others think?
- Specific responses to individual comments, reports and questions from other members of the community (IDS3) e.g. "Participant X I agree strongly with your thought that …..
- specific questions to clarify issues, deepen thinking and open up new directions and perspectives within the dialogue (IDS4) e.g. Participant Z, I'm not sure what you mean by ….. Can you provide an example?" or "I think we are tending to suggest that ….. but, couldn't we look at that another way by …..?

Following the MDDA analysis the quality of each individual's dialogue entries were 'scored' using the MDDA data. Five aspects of coded dialogue analysis data are used to report on the dialogue quality of individual participants. For ease of reporting this is referred to as the MDDA Quality Rating tool (MQR). The scores of individuals on five measures were calculated:

- the total 'quality' statement score, reporting the total number of statements scored under all eight coding categories;
- the personal opinion and reporting score, a count of all statements coded PMS1, PMS2 and PMS3, regarded as 'lower order' statements;

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- a personal interpretive, evaluative, reflective score, the number of statements made by the individual that were coded PMS4 and regarded as a measure of higher order thinking;

- a community oriented general responses and queries score, reporting the number of statements made by the individual that were coded IDS1 and IDS2 and regarded as 'lower order' community dialogue statements;

- and, a community oriented specific statements and responses score reporting the number of statements made by the individual coded IDS3 and IDS4, and regarded as 'higher order' dialogue statements.

The results of this analysis are reported in Tables 1, 2 and 6.

Appendix 2 – Focus Group Discussion Framework

Having now completed your Coming to Terms with Module I would like you to reflect on the experience of being involved in the module and what you have learned from it.

1. ***Reflections on The Perspectives/Values Exploration process***

   a. The most important things I have learned about the perspectives /values exploration process are …..

   b. Things about the perspectives /values exploration process that this module has resolved for me are ……

   c. Things about the perspectives /values exploration process that are still a concern for me are ……

   d. Where to now with the perspectives /values exploration process? What do you see as some of the key things that need to be done now to help teacher in their work with the perspectives /values exploration process …

2. ***Reflections on the Community of Practice Approach***

a. The most important things I have learned about the approach as a learning and development tool are …

b. The main strengths of this method of professional development and learning are …

c. The main weaknesses of this method of professional development and learning are …

d. Where to know with the community of practice approach? What potential do you see in this approach in professional development and learning in the future?

3. ***Over all evaluation of the Community of Practice Approach***

In comparison with other styles of professional development I have experienced in my teaching career I would rate this module/approach as ….

4. **Where to now?**

What changes and improvements would you suggest in order to make this module/approach more effective for other teachers?

5. **Anything else?**

Is there anything else you would like to say? Please write it here …

Thank you very much for your work in the module and in this review and reflection

Appendix 3 – Word Analysis: Microsoft Find Search Categories

Activity	Group	Teacher
Activities	Grouping	Technical
Academic		Technology
Approach	ICT	Terms
Awareness	Include	Terminology
	Included	Threat
Basis	Inclusive	Time
Buddy	Incorporate	Timing
Buddies	Insecure	
	IT	
Class	Integrate	Understand
Classroom	Intimidated	Understanding
Change		
Challenge	Knowledge	Value
Community		
Communicate	Learning	Web
Communication		
Comfort	Network	
Comfortable	Networking	
Connect		
Contact	Manage	
Correct	Manageability	
Craft knowledge	Modify	
Credibility		
Critical	Online	
Debate	Pedagogy	
Dialogue		
Discuss	Rate	
Discussion	Rating	
	Read	
Embed	Reading	
Embedded	Reflect	
Evaluate	Respect	
Evaluation	Respond	
Facilitate	Sharing	
Facilitator	Site	
Facilitation	Start	
Fear	Starting	
Feedback	Strategies	
Flexible		
Flexibility		

Appendix 4 – Final Questionnaire: The "Coming to Terms with" Online Module Experience

It is now some time since you were involved with the Coming to Terms with Perspectives/Values Exploration Online Module(s). I would appreciate it if you could take a few moments to reflect on the experience and its *impact on you as a secondary school Social Science teacher or advisor.* Please return your completed questionnaire, along with any appropriate illustrative material (see question 7) in the stamp addressed envelope provided.

1.   The nature of your participation in the module.
Please tick the appropriate box below to indicate the category that best describes your activity in the module(s). I

a.   Received the module start up letter but did not
         attempt to log onto the module classforum site.   □

b.   Tried to log onto the module classforum site but
         experienced technical problems and could not
         gain entry to the site.   □

c.   Entered the classforum site once or twice and
         looked around, but did not continue with the module.   □

d.   Entered the classforum site a number of times and
         read some of the material but did not complete any
         of the exercises.   □

e.   Entered the classforum site regularly
         and completed a number of the exercises.   □

f.   Entered the classforum site regularly and
         completed all of the exercises.   □

2. What were the things that made it difficult/challenging for you to take part in the module?
Please tick one box in each of the rows below to indicate the extent to which the factors listed below created difficulties and challenges for you as you engaged in the module(s):

	Not at all	Very little	To some extent	Quite a lot	A great deal
a. Technical issues and problems with access and with classforum	□	□	□	□	□
b. The time required to complete the Module	□	□	□	□	□
c. The complexity and difficulty of the module materials, notes and exercises	□	□	□	□	□
d. Heavy demand from my own time/workload/personal life	□	□	□	□	□
e. The long nature of some exercise and discussion entries was off-putting	□	□	□	□	□
f. The online discussion seem too irregular, shallow and stilted. I was hoping for more lively online discussion with lots of people participating.	□	□	□	□	□
h. Other (please elaborate in the any other comments section on page 4)	□				

<u>IMPORTANT NOTE:</u>

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If you ticked in row a, b or c in <u>question 1</u> above please go to item 10 below.
If you ticked in row d, e or f in <u>question 1</u> above <u>please continue with all questions</u> in the questionnaire.

3. Please tick the appropriate box on the five point scale below to show the <i><u>extent to which</u></i> the module experience **has influenced the way you think about the perspectives and/or the values exploration process** <i><u>since you completed your work with the module</u></i>. The online module experience has influenced my thinking:

Not at all   Very little   To some extent   Quite a lot   A great deal

☐   ☐   ☐   ☐   ☐

4. Could you please give **one or two examples** of ways in which the module experience has influenced your thinking *about the role of the perspectives and/or values exploration in Geography and/or Social Studies*.

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5. Please tick the appropriate box on the five point scale below to show the <i><u>extent to which</u></i> the module has influenced **your thinking about the kinds of teaching strategies and learning activities best suited to developing perspectives and values exploration thinking with students,** <i><u>since you completed your work with the module</u></i>. The online module experience has influenced my thinking about strategies and activities:

Not at all   Very little   To some extent   Quite a lot   A great deal

☐   ☐   ☐   ☐   ☐

6. Could you please give **one or two examples** of ways in which the module experience has influenced your thinking **about the kinds of teaching strategies and learning activities best suited to developing perspectives and values exploration thinking with students**.

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7. Could you please tick the appropriate box on the five point scale below to show the ***extent to which*** the module has influenced **your classroom practice when working on perspectives and values exploration thinking with exploration thinking with students,** ***since you completed your work with the module***. The online module experience has influenced my classroom practice:

Not at all   Very little   To some extent   Quite a lot   A great deal

☐   ☐   ☐   ☐   ☐

8. Could you please give **one or two examples** of ways in which the module experience has influenced **your classroom practice when working on perspectives and values exploration thinking with students**.

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9. It would be really helpful for me, and for my research, if you were able to send me: …

… an electronic copy (first preference) or a paper copy (if an electronic one is difficult to provide), of one or two: class room activities; or a modifications to a teaching unit; or new units developed; or any other items; …

… that you think illustrate some of the ways in which **you have changed aspects of your teaching practice** as a result (or partly as a result of) your participation in the online module you did with me. These need to be things that you have developed, or changed or modified ***since you completed your work with the module***. You may want to write some brief annotations on the items to highlight where you think ideas and strategies gained in the online module experience have had an influence/been incorporated.

If you can send electronic examples please send them as email attachments in Word to paulk@waikato.ac.nz . If you need to send paper copies, please use the stamp addressed envelope provided.

10. Any other comments?   If there is anything else you would like to add please write it in the box below

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Thank you very much for your work in completing this questionnaire. Your participation in this research has been most appreciated.

Appendix 5 – Ethics Approval

Throughout this section the ethical issues involved in each of the two different types of data involved in this project will be discussed separately.

- **Access to participants**

  1. Due to the nature of the online community of practice process all participants will have access to the ideas and comments of one another during the life of the online community. An important part of establishing a community of practice is developing a sense of mutual trust and a commitment and to retaining confidentiality within the group. I will ensure that these procedures are carefully followed to ensure participants feel safe and secure within the community. Only the participants in the community of practice, me and my supervisors will have access to the comments made by participants.
  2. The evaluative questionnaire and teacher generated materials provided will be accessed only by me as researcher and by my supervisors.

- **Informed consent**

  Informed consent will be by signature of a consent form. The form will be signed by participants and countersigned by the researcher ahead of any data collection. This form is attached.

- **Confidentiality**

  As outlined above there are two different sets of circumstances in relation to confidentiality.
  1. Firstly in the case of the ClassForum exercise and discussion data ideas, information and comments made by participants is provided within a community of practice context. That is, comments are open to all within the online community. As explained above participants will be carefully introduced to the importance of community of practice procedures. A key aspect of this is agreeing to ensure specific details relating to individuals within the community remain confidential to those in the group. However, as this module is a professional development activity, participants will be able to discuss issues, themes and ideas with others outside the group, particularly professional colleagues. However, when doing so they will be expected to refrain from attaching the names of individual participants to particular ideas and opinions.
  2. The information provided in the evaluative questionnaire and teacher generated materials will be held in confidence during the data analysis period and then returned to individuals.

- **Potential harm to participants**

  1. As outlined above there is a potential for harm to individuals due to the open disclosure of ideas, information and comments within the online community environment. However, the community of practice method includes within it

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agreed procedures and processes that ensure that all participants make a commitment to safe practices ensuring that mutual respect, consideration, trust and confidentiality are adhered to. I undertake to ensure that participants are fully aware of the importance of upholding these principles and practices during and after the module. The secure ClassForum discussion environment ensures confidentiality and prevents potential risk beyond the online community.

2. Evaluative questionnaire and teacher generated materials will be held in confidence during the data analysis period and then returned to the individuals concerned. This data will only be used to report trends, themes and to provide illustrative quotes. There should be no potential for harm.

- **Participants' right to decline**

It will be explained to each person that they have the right to decline to participate in the research, and the right to withdraw at any stage of the project. The letter of invitation will make it clear that participation in the module does not require participation in the research, and that the identity of participants will remain anonymous. .

- **Arrangements for participants to receive information**

1. While participating as a member of the module individuals will share in the active exchange of views and opinions. As explained above the ClassForum technology allows full editorial rights until the end-point of the module. However, the research thesis and subsequent publications may be produced several years after module completion. It is not practical to deliver substantive writing to participants for review after the completion of the module and the module follow up period.
2. Participants will receive a summary of the results of the evaluative questionnaire and teacher generated materials analysis when provided materials are returned.

- **Use of the information**

All information provided will be used only for the purposes of producing a PhD thesis and in the writing of any academic publications that may ensue later. As such writing will report overall trends, themes, process and procedures, and will not report on individual circumstances in any way, there are no specific ethical issues.

- **Conflicts of interest**

There are two potential areas of conflict of interest in the research.

The first is related to the fact that I am one of the module facilitators and also the researcher. I am aware of this as a potential conflict of interest. However, as the module is not a graded course and anyone who completes all exercises in the course receives a certificate of completion, this potential conflict is not a major issue in this instance. I believe by being fully professional in both roles I will be

able to ensure that the roles of facilitator and researcher are kept separate and do not lead to any conflict of role and interest.

Secondly, the provision of copies of activities, lessons, units, scheme statements or other written material developed by participants as a consequence of involvement in the modules is also a potential point of conflict of interest. However, as there is no intention to do any more than extract trends, themes, and illustrative quotations. All materials will be returned to individuals at the end of the data analysis stage. Thus participants in effect retain ownership of materials and there will be no conflict of interest.

- **Other ethical concerns relevant to the research**

  Nil.

3. <u>Legal Issues</u>

Outline legal issues which may arise in the course of this research under the following headings:

a) Copyright

The research is conducted within a university PhD study framework. The research is not in the public domain. Any subsequent academic writing would be subject to normal copyright practices.

b) Ownership of data or materials produced

The research is the owned by me as the researcher and the University as the institution within which the PhD thesis is produced. Normal academic supervised postgraduate research protocols will apply.

c) Any other legal issue relevant to the research

I accepts responsible for my own actions, but anticipate that as long as the research is carried out using the ethical procedures described above, I can expect support from the University community.

4. <u>Research Timetable</u>

a) Proposed date of commencement of data collection:

June 2003

b) Expected date of completion of data collection:

June 2005

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