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Bringing it to the teacher: Meeting the needs of teachers in isolated schools of students with oppositional and defiant behaviours

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Bringing It To The Teachers:

Meeting the needs of teachers in isolated schools of students with oppositional and defiant behaviours

Fiona Maree McLean

Bachelor of Teaching
Bachelor of Education (Hons)

This thesis is submitted in fulfilment of the requirements for the award of

Doctor of Philosophy

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University of Wollongong

Faculty of Social Sciences, School of Education

THESIS CERTIFICATION

I, Fiona Maree McLean, declare that this thesis, submitted in fulfillment of the requirements for the award of Doctor of Philosophy, in the School of Education, Faculty of Social Sciences, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

.....

Fiona Maree McLean

16 December, 2014

ABSTRACT

For teachers in isolated schools in remote New South Wales, Australia, support may be lacking in meeting the needs of students with oppositional and defiant behaviours. This lack of support may lead to impediments in the development of teacher professional identity and could even lead to teachers leaving the profession. These trends are alarming considering the disproportionate number of beginning teachers working in isolated schools.

The purpose of this research was to design an effective method of meeting the needs of teachers in isolated school of students with oppositional and defiant behaviours. The study investigated the needs of these teachers in regards to professional support. Further the study aimed to establish innovative ways to provide for the teachers' professional learning that could increase the capacity of the teachers to meet the needs of this challenging cohort and at the same time reduce the impact on teachers and students alike.

The Bringing It To The Teachers (BITTT) research project consisted of three elements: the BITTT online learning environment, the BITTT Community of Practice and the BITTT model. These three elements combined together to support teachers in isolated schools to cope with the demands of teaching students demonstrating externalising behaviour. Further they informed future directions for teacher

support in isolated schools.

Building on a sociocultural theoretical frame, this study utilised a four-phase design-based research model to develop, test and refine the Bringing It To The Teachers (BITTT) online learning environment and model in an authentic setting. Then it utilised a Community of Practice framework to develop the dispersed BITTT community. This qualitative study allowed ten purposively sampled teachers, of varying experiences, the opportunity to participate in the development and refinement of these important tools that sought to enhance their teaching experience in isolated settings. It incorporated data from a series of participant interviews and questionnaires with data from a focus group of experts in student oppositional and defiant behaviours and statistical data to shape the direction of the research. These data sources combined with existing design principles to allow the creation of the BITTT community of practice, which successfully delivered online support and professional learning for the participant teachers.

The online learning environment was tested and refined through iterative cycles of improvement, culminating in the final version of the site, and a set of the design principles. The results demonstrated that the online learning environment met the professional learning needs of teachers in isolated schools, particularly in regards to the students with oppositional and defiant behaviours. Also it was an effective vehicle for supporting their professional skills, efficacy and professional identity in an authentic setting.

The conclusions of this study were that the emergent BITTT online learning environment and Community of Practice demonstrated promise in meeting the social, support and professional learning needs of teachers in isolated schools of students with oppositional and defiant behaviours. This study contributed to the professional knowledge in the field of rural education, online learning, and Communities of Practice with the development of a conceptual model of how sociocultural theories interact with the Community of Practice elements and the BITTT design principles.

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I would not have been able to make this journey without the support of my beautiful children Taylor and Lauchlan. They have struggled on without me, and have looked after themselves many nights while I stayed late at the office, but were always ready with hugs and love when I needed them. My amazing mother Noelene has been my number one supporter and has helped me care for the children, and the hounds, whilst I was on my research trips. I would like to thank my extended family Shaz and Ron, Bert, Dad, Chris and Sandra, Chez and Tuan for helping me out and looking after the kids and I. I wish Tic-Toc was here to see it complete.

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DEFINITION OF TERMS

Beginning teachers

A newly graduated teacher in the first three years of their teaching career.

Behaviour Unit

A support unit in a mainstream school that provides intensive educational programs designed specifically for students with Emotional disturbance and behavioural disorders. The teacher/ student ratio is generally seven students to one teacher and one support officer (aide).

Country Areas Program (CAP)

The Country Areas Program (CAP) is an equity program designed to assist students and their communities to enhance the learning outcomes and educational opportunities for students in geographically isolated areas.

Department of Education and Communities (DEC)

The NSW State Department that oversees all public schools in NSW. At the commencement of this study it was the NSW Department of Education and Training.

Isolated school

An isolated school, as defined by the NSW DEC is a school more than 90km from a population centre of 10,000 people or more that also meets the isolation index criteria.

Iterations

The cycle of testing, modification and improvement used in Design-Based Research. The results of each iterative cycle inform the next iteration.

Oppositional Defiant Disorder (ODD)

ODD is a behavioural disorder diagnosed using the following diagnostic criteria as outlined in the DSM IV (APA, 1994, p.100)

A. A pattern of negativistic, hostile, and defiant behavior lasting at least 6 months, during which four (or more) of the following are present:

(1) often loses temper (2) often argues with adults (3) often actively defies or refuses to comply with adults' requests or rules (4) often deliberately annoys people (5) often blames others for his or her mistakes or misbehavior (6) is often touchy or easily annoyed by others (7) is often angry and resentful (8) is often spiteful or vindictive Note: Consider a criterion met only if the behavior occurs more frequently than is typically observed in individuals of comparable age and developmental level.

B. The disturbance in behavior causes clinically significant impairment in social, academic, or occupational functioning.

C. The behaviors do not occur exclusively during the course of a Psychotic or Mood Disorder.

D. Criteria are not met for Conduct Disorder, and, if the individual is age 18 years or older, criteria are not met for Antisocial Personality Disorder.

(Note this research was conducted using the DSM IV, however, during the research period the DSM V was published with minor modifications to the diagnostic criteria)

Oppositional and defiant behaviours

The behaviours mentioned above as representative of children with ODD and demonstrated by children, with or without a diagnosis. This study used this term due to the isolation impact on the ability of parents and carers to obtain a diagnosis.

Introduction

1.1 Introduction

Teachers in isolated schools in remote New South Wales, Australia, have identified that support for the challenging aspect of meeting the needs of students with oppositional and defiant behaviours is an important element of professional practice that is missing in this context. This lack of support may lead to barriers in development of teacher professional identity and rates of improvement in professional practice of teachers in these isolated settings. Further, these obstacles could even lead to an increase in teachers choosing to leave the profession. When considering the disproportionate number of beginning teachers working in isolated schools, the support for these teachers takes on additional importance.

This thesis reports on an investigation of professional development opportunities for teachers in isolated schools to support their skills and knowledge in teaching students with oppositional and defiant behaviours. The research used design-based methodology to investigate, design, trial and implement a practical solution to the identified problems, primarily, a lack of sufficient support for this cohort of educators. It aimed to provide design principles for a distributed Community of Practice (CoP) for teachers in isolated schools as a means of providing support and professional learning in a practical and pertinent manner. The study drew upon sociocultural theory, the concept of CoP and the behavioural disorder literature.

1.2 Background to the study

Students with behaviour disorders are perceived to be one of the most significant concerns for teachers (Reynolds, Stephenson & Beaman, 2011). If these disorders are not managed properly, there can be a significant negative impact on the students themselves, the learning environment, other students and the teacher (Gresham, Lane & Lambros, 2000). To avoid this impact, the teachers need to be adequately trained in behaviour management, mentored and supported to enable them to successfully develop and maintain an appropriate professional identity. The lack of access to such professional development resources is a significant problem of teachers in isolated schools. There is also a lack of depth of research addressing these issues from the perspective of teachers in isolated schools in New South Wales (McLean & Dixon, 2010; Lyons, Cooksey, Panizzon, Parnell & Pegg, 2006). These concerns were the catalyst for this research.

As a result of the concerns outlined above, schools in remote and isolated western NSW are often considered 'hard to staff'. Studies have shown that teacher recruitment and retention in remote schools is a significant issue for Principals in these areas (Panizzon & Pegg, 2007; McKenzie, Rowley, Weldon & Murphy, 2011). A majority of Secondary Principals (66%) and a significant number of Primary Principals (39%) in remote locations across Australia reported moderate to major

difficulty filling teacher positions (McKenzie et al., 2011). Beginning teachers often fill these positions. Research into school principals' perceptions of beginning teacher preparedness found that 72% (75% primary, 69% secondary) of new teacher graduates were either poorly prepared or somewhat prepared to cater for student differences. Similarly, principals thought that 72% (70% primary, 74% secondary) of new teacher graduates were either poorly prepared or somewhat prepared to effectively manage a classroom (McKenzie et al., 2011). The combination of inexperience and poor preparation indicate that staff retention could become a significant issue for schools in remote and isolated areas with 25% of primary schools and 57% of secondary schools having moderate to major difficulty retaining suitable staff. Also, these teachers will make decisions on remaining in the profession based on experiences in the first five years, including the level of support and professional learning they receive (Pranther-Jones, 2013).

In spite of the high number of early career staff, all teachers in isolated schools are expected to provide the same level of education to their students as their metropolitan colleagues. Distance and isolation lead to difficulties in providing essential support and professional learning services and this is acknowledged as a major problem for these schools (Lyons et al., 2006). Therefore, investigations of new ways of offering supportive professional learning which focus on the teachers' perspective are imperative if isolated schools in New South Wales are to offer a quality environment in order to attract and retain teachers in hard to staff schools

and to be able to offer quality experiences to students with behavioural difficulties.

1.3 Personal Background

When I began my teaching career, I had little experience with students with behaviour disorders and found that I was not sufficiently prepared for teaching these students. When confronted with a challenging situation, I sought assistance from the regional behaviour team and drove to their office, which was ten minutes away, and received a range of resources, strategies and advice. A member of the behaviour team was able to come to the classroom and use direct observation to perform a functional behaviour analysis. I was then supplied with a range of strategies for dealing with this student and was assisted in creating specific resources that targeted the student's needs. As a beginning teacher this was an invaluable experience that helped me develop my professional expertise, knowledge and self-efficacy in being able to meet the needs of challenging students.

At the same time colleagues of mine were appointed to schools in isolated areas of NSW. When discussing our teaching experiences, one colleague was unsure where she might obtain the same support, as the regional office was close to 400 kms (250 miles) away. These collective experiences instilled a passion in me for the equitable

provision of resources and support for teachers in isolated schools, which was the basis of my Bachelor of Education (B.Ed) Honours project. Research into the needs of teachers in isolated schools of students with Oppositional Defiant Disorder (ODD) was the focus of my B.Ed Honours project, which included in-depth interviews with four teachers in isolated areas of NSW. The findings of that study highlighted the needs of these teachers in isolated schools and fuelled my interest in developing a viable solution for them.

This study is an extension of that work. I chose a Design-Based research approach to make a real and practical change for teachers in isolated schools. This study was a real opportunity for me to improve the teaching experience for teachers in isolated schools and to trial a method of supporting those teachers in an innovative platform.

The combining of the initial study and the journal article written based on these findings requires an explanation of the transition between the terms Oppositional Defiant Disorder and oppositional and defiant behaviours. In the initial study the students had a mental health (informal ODD) diagnosis, in the later study we modified it to cover oppositional and defiant behaviours, as this allowed teachers of students who demonstrated these behaviours but were without diagnosis to be included. This is particularly relevant as the greater the distance a school is from the regional centre, the less likelihood that students will have a diagnosis.

1.4 Aims and Research Questions

The aims of the research were to identify and refine a method of supporting teachers in isolated schools by providing access to professional learning, expert advice and a community that provides collegial support in an innovative format that is specifically tailored to meet the needs of their learning environment. Therefore, the purpose of this research was to explore the context in which teachers in isolated schools function and assess issues related to the provision of support to these teachers.

The following research questions were the main focus of this study:

1. What are the key issues in professional learning for teachers of students with oppositional and defiant behaviours that need to be addressed in an online learning environment?
2. What is the role of social interactions in supporting the participants of an online learning environment?
3. What are significant design principles for an online learning environment for teachers of students with oppositional and defiant behaviour in isolated schools?

1.4 Significance

A number of studies have identified that teachers in these areas are disadvantaged by the lack of support in regards to opportunities for improving practice with professional learning (McLean & Dixon, 2010; Lyons et al., 2006), however, tangible solutions have not been identified. This study offered an innovative solution, and used specific contextual feedback to refine the solution and to identify design principles that, in turn, allowed for further development of the solution. The Bringing It To The Teachers (BITTT) project identified ways in which these teachers could be supported and designed an authentic and relevant solution, including design principles for the online learning environment and a theoretically supported model. The finding of this multi-modal BITTT model could assist in developing a significant cutting edge resource for all teachers in rural, remote and isolated schools and go some way to improving the retention rate of teachers in these areas. The ability to inform future practice in the development of models of professional learning which could improve the teaching and learning environment in isolated areas is also significant.

1.5 Participants and methodology

The five participant schools for the study were purposefully sampled from isolated areas. Each met the NSW DET Country Area Program isolation index criteria and had no specific 'behaviour unit' within the school. Teachers with students demonstrating oppositional and defiant behaviours were invited to take part in the study and of these, 15 teachers chose to participate.

The study employed Design-Based Research as a methodological framework to analyse and develop practical solutions for teachers in isolated schools. Design-Based research utilises a multi-phase approach to testing and developing solutions using iterative cycles of testing and improvement. This study combined Design-Based research with a theoretical framework of Sociocultural Theory and Activity Theory, in a bid to identify the relationships between the participants and the solution. The four phases of this research included: Phase One, a needs analysis identifying the needs of the participant group; Phase Two, the development of the BITTT site; Phase Three, the iterative cycles of testing and improvement and Phase Four, the reflective phase which analyses effectiveness. The reflective phase then informed the development of the design principles.

The qualitative methodology allowed teachers in isolated schools to have a voice to

share their concerns about the level of support they received and an opportunity to have input into the development of a tangible solution to this problem.

This qualitative study used DBR to address the issues raised by participants by identifying the problem (lack of support and professional learning for teachers in isolated schools of students with oppositional and defiant behaviours), developing a solution (the BITTT site) and refining the solution (the BITTT CoP and model). The three elements of the BITTT project are shown below (Figure 1.1). The BITTT site is an online resource that is the vehicle used to distribute information and resources to isolated teachers, and is also a community meeting place for the CoP. The BITTT Community of Practice is the members and peripheral users of the site. The BITTT model is the diagrammatic representation of the interactions and learning that is carried out by the CoP members.

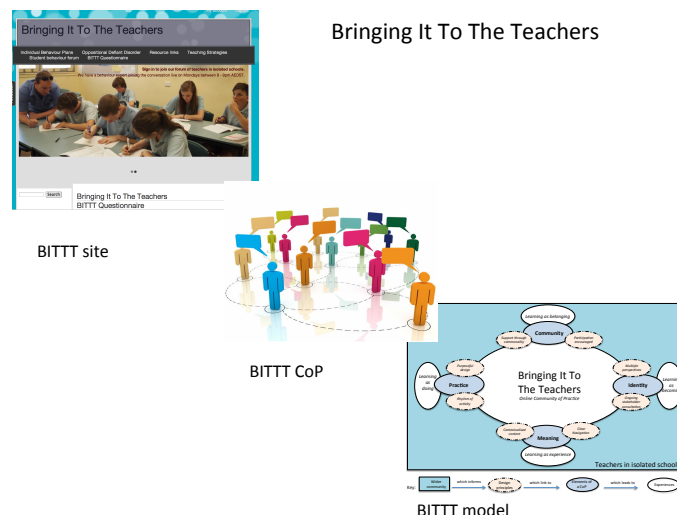


Figure 1.2.1 The Bringing It To The Teachers (BITTT) project elements

A Community of Practice is defined as a group of “people who share a concern, a set of problems or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (Wenger, McDermott & Snyder, 2002, p. 4). In this case the problem is the access to appropriate support and professional learning in relation to teaching and managing the behaviour of students with oppositional and defiant behaviours. This support in isolated schools may come from direct supervisors, or in very small schools from a supervisor in another location. The development of a CoP in the physical sense may be impossible for some teachers in remote or very remote areas. These teachers rely on connected technologies and a more distributed or virtual CoP.

1.6 Organization of this thesis

This thesis is presented in the compilation style, with a combination of chapters written in a both traditional format and a format that is consistent with journal article styles. Two of the chapters are published journal articles, and a third has been submitted for review. Each of these articles contains a literature review and methodology relevant to that portion of the study and will be presented in the style of the publishing journal, with the addition of an explanatory paragraph at the beginning of each paper.

In this chapter, the purpose of the study was explained and the significance of this study was established. In Chapter Two, a review of literature is provided which gives a basis for the development of this study. The challenges that face teachers of students with oppositional and defiant behaviours in isolated settings are identified and the role of support services in supporting them are described. The theoretical underpinnings that frame the study are further defined in Chapter Two. Chapter Three is a methodological chapter, which explains the Design-Based research approach used and the phases of research are identified and explained utilising a Community of Practice theoretical framework. The data collection and analysis processes are defined.

Chapter Four is the first of the published articles, identifying the needs of teachers in isolated schools of students with behaviour disorders. This describes some of the findings of Phase One of the research, which, combined with further interviews, a literature review, and a focus group of behaviour experts allowed for the development of the initial design principles for the Bringing It To The Teachers site.

Chapter Five contains the second article based on the development of the Community of Practice in isolated schools. This article examines the need for and provision of professional networks for teachers in isolated schools and discusses the fledgling establishment of the BITTT CoP during Phase Two of the research. This information was presented both at a national conference on rural education and

published in the Australian and International Journal of Rural Education.

Chapter Six includes a third journal article, which has been accepted for publication to an international journal. This article examines the development of the BITTT site and iterative cycles of testing and improvement of the BITTT site during Phase Three of the research. This includes the initial design principles and participant feedback and data from questionnaires, which informed the four iterative cycles of improvements made to the site.

Chapter Seven further discusses and unpacks the four iterative cycles of improvements made to the BITTT site. It analyses the participant feedback and methods of improvement that led to the development of the final design principles.

Chapter Eight provides a discussion on the major findings of the study, an explanation of the theoretical model of the BITTT site and how the model fits within the theoretical framework of sociocultural learning and Communities of Practice. Further, this chapter answers the research questions, and delivers the significant design principles for an online learning environment for teachers of students with oppositional behaviour in isolated schools. Chapter Nine provides directions for future research and a brief conclusion, which summarises the findings.

Literature Review

2 LITERATURE REVIEW

This chapter is presented in two parts. Firstly it presents a review of the literature in relation to the complexities of teaching students with oppositional behaviours in mainstream classrooms and the implications of this issue for teaching in isolated schools. Specifically, the review provides an insight into the needs of the teachers in isolated schools for professional learning in the area of behavioural difficulties and identifies the gap within which this research falls. Secondly, this chapter presents the sociocultural theoretical framework that supports this research project.

Part one of this review begins by looking at the current research on students with behaviour disorders, particularly oppositional behaviours. The complexities of teaching these students and the definition of oppositional and defiant behaviours used in this study are outlined. Secondly, current research into the impact of these oppositional and defiant behaviours on teachers, which includes the stress and well-being of these teachers, is discussed. Thirdly, existing support and professional learning available to the teachers in isolated schools are described and finally, models for teacher professional learning that are suitable for isolated teachers are investigated.

Part two of this review discusses the theoretical underpinning of this research, examining how a sociocultural approach and associated activity theory can be used to support a Community of Practice (CoP) for teachers in isolated schools of students with oppositional and defiant behaviours.

This review is complemented by the targeted reviews in each of the published articles (Chapters 4, 5 and 6).

2.1 Students with behaviour disorders in the classroom

The Vinson report (Vinson, 2001) into public education highlighted the growing incidence of behavioural problems within the NSW public school system. More recent research has also affirmed that the number one concern for teachers is students' behavioural problems in the classroom (Akin-Little, Little, & Laniti, 2007; McCormick & Barnett, 2011; Reynolds et al., 2011).

One disorder that is causing particular concern is Oppositional Defiant Disorder (ODD). ODD is a psychiatric disorder that “predicts problems with later academic progress, peer acceptance, later depression, suicidal ideation, and suicidal attempts” (McMahon & Wells, 1998 cited in Barcalow, 2006, p. 10). It is a serious psychiatric disorder, which is a precursor to the more serious Conduct Disorder

(CD), which is characterised by aggressive law-breaking and violent behaviours. The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (APA, 1994) define ODD as “a recurrent pattern of negativistic, defiant, disobedient and hostile behaviour towards authority figures that persists for at least six months” and that “in a significant proportion of cases, ODD is a developmental antecedent to Conduct Disorder” (p. 100). This is the diagnostic definition used to inform this study. (Note this research was conducted using the DSM IV, however, there is now a DSM V which differs from the former only with regards to modifications to the diagnostic criteria with the inclusion of a severity scale and guidance on frequency of behaviours).

This disorder can stand-alone or be co-morbid with a number of other disorders, most commonly ADHD, mood disorders and depression (Barcalow, 2006; Forness, Walker, & Kavale, 2003). An Australian study by Little, Hudson and Wilks (2000) indicated that 5.6% of students demonstrated externalizing behaviour problems such as anger, defiance of authority, impulsive behaviour and destructive behaviours often associated with ODD in school. This study also reports that students with ODD are frequently ‘confrontational, disruptive, vindictive’ students who purposefully manipulate and resist control of teachers and other adults. Further, the disorder is characterised by chronic argumentativeness, defiance and anger, and is associated with functional impairment and disturbed interpersonal

relations (Pfiffner, McBurnett, Rathouz, & Judice, 2004; Woolsly-Terrazas & Chavez, 2002). The future life outcomes for students with ODD who do not receive intervention and an effective education are dire (Barcalow, 2006; Kaiser & Hester, 1997), as the externalising behaviours of students with ODD and other behavioural disorders have an impact on their learning as well as other outcomes.

Oppositional behaviour problems have a direct and serious effect on the student's future by impacting on academic performance (Infantino & Little, 2005; Little, Hudson, & Wilks, 2002). Another consequence noted by Paulson, Buermeyer, & Nelson-Gray, (2005) was the social rejection by peers of a student with a psychiatric disorder. The pathway of conduct problems including ODD, begins in early childhood with anti-social behaviour, progressing in 'frequency, severity and intensity' throughout a child's development (Gresham et al., 2000, p. 86). Research suggests that the path outlined above can lead students towards impaired social and school functioning and the capacity to self regulate (DeLisi, Dansby, Peters, Vaughn, Shook & Hochstetler, 2014). Without intervention the behaviours and actions of 'at risk' children can progress towards delinquency and incarceration. Thus intervention is required to ameliorate these risks and teach students appropriate behaviours.

The importance of early intervention in order to alter anti-social developmental

pathways and improve academic outcomes has been shown to be successful (DeLisi, Vaughn, Beaver, Wexler, Barth & Fletcher, 2011; DeLisi et al., 2014; Kaiser & Hester, 1997). In examining ways of reducing disruptive behaviour within the mainstream classroom, Hoff and DuPaul (1998) found giving frequent meaningful feedback as a method of teaching students to self-regulate was effective. This result was further supported by Vance, Gresham and Dart's (2012) research on teaching self-monitoring techniques and differential reinforcement of other behaviour to improve on task behaviour, to students with behaviour disorders, which demonstrated increases in the level of time on task by up to 90% (self-monitoring). However, another issue of concern was the time teachers spent teaching self-monitoring techniques and generally responding to behaviour.

In classrooms across NSW, students with ODD face a very serious problem, as a lack of self-regulation, coupled with the absence of outside intervention, can be a direct pathway to delinquency. ODD is associated with impaired social, behavioural and emotional function, which impacts on a student's relationships, on their learning and the learning of others. Early intervention has been shown to benefit students with ODD, but time-poor teachers may find implementing these strategies to be stressful.

2.2 Teachers and teacher stress

It is obvious that oppositional and defiant behaviours affect not only the student and the other students in the class, but teachers as well. Teachers, in general, feel stressed by the day-to-day managing of the behaviour of students with ODD (Woolsly-Terrazas & Chavez, 2002). High levels of teacher stress have been linked to highly disruptive students within the class (Morin, 2001). Karaj and Rapti (2013) found correlations between teacher job stress and disruptive student behaviour.

Whilst these students can exhibit seriously challenging behaviours, it is the more frequent and less destructive behaviours that cause teachers the most concern. It is the sheer frequency of occurrence of behaviours classified as 'anti-social' by Ross and Horner (2007, p. 2) that makes teaching these students so stressful (Reynolds et al., 2011; Infantino & Little, 2005). Reynolds et al's (2011) research to determine which behaviours caused rural teachers the most difficulty, found that it is the minor but high-frequency non-compliant behaviours that cause the most difficulty. Further Reynolds et al. (2011) determined that more than half of the participants needed support to deal with non-compliant behaviour, like 'physical refusal', with 69% of teachers stating that they spent too much of their teaching time dealing with non-compliant behaviour.

Other related research has shown that heightened levels of teacher stress were associated with teaching students with Attention Deficit Hyperactivity Disorder (ADHD) who were displaying oppositional and aggressive behaviours, and had impaired social skills (Greene, Beszterczey, Katzenstein, Park, & Goring, 2002). When investigating teacher burnout, Pietarinen, Pyhältö, Soini and Salmela-Aro (2013) found teachers' proactive strategies assisted in negating teacher stress. Utilising an Index of Teacher Stress (ITS) Greene et al. (2002), interviewed 64 teachers to establish teacher ratings of the stress of teaching students with ADHD, 75% of whom also met the diagnostic criteria for ODD. When discussing which types of students were more stressful to teach, the teachers rated general behavioural problems in isolation in the middle of the range. However, when oppositional behaviour was combined with ADHD, these students were given a much higher stress rating to teach (Greene, et al., 2002).

When teaching students with these co-morbid conditions, teachers rated their stress levels highest in regards to self doubt and the need for support (Greene, et al., 2002). Teaching students with behavioural disorders puts teachers in a highly stressful situation which can affect their health. Many studies (Buchanan, Prescott, Schuck, Aubusson & Burke, 2013; Manuel, 2003; Nelson, Maculan, Roberts & Ohlund, 2001; Westling, Herzog, Cooper-Duffy, Prohn & Ray, 2006; Wisniewski & Gargiulo, 1997) have indicated that high levels of teacher stress were a contributing

factor to early exit from the profession.

Encouragingly, recent research reveals that teachers can negate stress, reduce vulnerability to burnout and become less likely to leave the profession, by implementing proactive strategies (Pietarinen, Pyhältö, Soini and Salmela-Aro, 2013). These proactive strategies can include awareness of current best practice classroom strategies which are the most appropriate for students with ODD. Once they are aware of these strategies, teachers can implement effective classroom management. This may include making students aware of what are appropriate and inappropriate behaviour is in the classroom, and setting clear expectations (Little & Hudson, 1998 cited in Infantino & Little, 2005). Teachers also need to be aware of the importance of using stronger and more structured techniques when teaching students with ODD. Teachers in isolated schools need access to professional learning in regards to these effective strategies, however, there may be a disconnect between the need for, and the ability to access, professional and personal support (Manuel, 2003).

2.3 Teacher support in isolated schools

Previous research, outlined below, has shown that isolation has an impact on the access to professional and personal support. A significant area of support needed

by teachers is the opportunity for professional learning focused on students with behaviour disorders. A second important factor is the need for mentoring from experienced colleagues or specialised staff with training and qualifications in teaching students with behavioural disorders. A third aspect is the lack of collegial support from teachers in similar positions (Cancio, Albrecht & Johns, 2013; Buchanan et al., 2013). Buchanan et al. (2013) in a study of 42 early career teachers over a period of four years, identified six broad areas that impacted beginning teachers' experiences. These included collegiality and support, student behaviour, access to professional learning, workload, working conditions and isolation. Kelly, Reushle, Chakrabarty and Kinnane (2014) found that, of 118 beginning teachers close to 20% received very little support from their school. This finding was supported by the research of McKenzie et al. (2011), that revealed 20% of beginning teachers received neither mentoring nor induction.

Research has shown that the lack of access to services, appropriate support and professional development, can seriously affect a teacher's ability to 'marshal reserves of optimism' in addressing their situation (Squires, 2003). Beginning teachers feel overwhelmed with the steep learning curve of their first classroom, fitting into a new community and the requirements of being a teacher in an isolated area (McLean, 2008). They also found participation in professional development was impacted by the isolation. Buchanan et al. (2013) found that some beginning

teachers valued professional conversations, when they had access to a knowledgeable mentor, but that these mentors were not always available.

The second factor identified is lack of support from mentoring colleagues. Research found that the quality of collegial support and mentoring, which in NSW relies on the availability of more experienced colleagues, made a substantial difference to the teaching experience of beginning teachers (Buchanan et al., 2013; Richter, Kunter, Lüdtke, Klusmann, Anders & Baumert, 2013). Even when adequate support is available, beginning teachers sometimes feel vulnerable and isolated (which may be both real and perceived) and they can result in a lack of confidence in asking for support or expressing their feelings (Buchanan et al., 2013; Smith Risser, 2013;; Mawhinney, 2008; Moore & Chae, 2007). Nadelson, Seifert, Hettinger and Coats (2013) suggest that “steps should be taken to ensure that teachers have the knowledge, support, connectivity, and resources necessary to access the sources of information” (p.92) to support their professional and emotional needs.

The third factor identified is the lack of support from teachers in the same circumstances. Unfortunately, teachers in isolated schools, many of whom are beginning teachers, rely on a limited pool of colleagues for support, experience restrictions to professional learning and also feel isolated. In assessing teacher perceptions of the impact of challenging student behaviour on their lives and

prospects of staying in the profession, Axup and Gersch (2008) found that no existing support was effective, “and in some cases little support was available” (p. 150). The level of support a teacher receives can also influence their choice to remain in the profession or leave within the first years (Buchanan et al., 2013; Cancio et al., 2013; Pranthier-Jones, 2011).

The lack of support that teachers in rural schools may feel manifests itself in a sense of professional isolation and perceived disadvantage in the areas of professional development and learning (Tytler, Symington, Darby, Malcolm, & Kirkwood, 2011). Buchanan et al., (2013) describe four categories of isolation that impact beginning teachers; “physical, geographic, professional and emotional” (p. 122). Factors impacting on high teacher turnover can also be correlated to professional and geographical isolation (Buchanan et al., 2013; Brasche & Harrington, 2012). Geographical isolation can limit a) teachers’ opportunities for professional learning and b) access to the effective strategies for dealing with students with oppositional and defiant behaviours, both of which could ameliorate their stress levels (Buchanan et al., 2013; McLean, 2008; Waldrip & Fisher, 2000). Research suggests that accessing support services before the behaviour of the student escalates from anti-social to violence or conduct disorder is optimal, therefore, access to support is important for both teachers and students (Salend & Sylvestre, 2005). However, in an isolated school access to timely intervention is a major area of difficulty.

Educators, including special educators, complain of feeling isolated and without emotional support as they face daily challenges (Westling, et al., 2006). Similarly, such emotional isolation may be considered a feature of the working environment of teachers in isolated schools of students with oppositional behaviours.

Teachers need support and access to professional learning in order to become professionally competent, but teachers in isolated schools are inhibited by a lack of access to these professional learning opportunities. They also have a limited pool of colleagues and mentors from whom to draw support. Limited access to support during the first five years of a teacher's career can impact on their decision to stay in the profession.

2.4 Support services and teacher professional learning in isolated schools

In regional and suburban areas, teachers and students can access support from specific 'Behaviour Units' or behaviour support classes, which assist teachers with the management of students with ODD. The specialist staff at these support classes and units can assist mainstream classroom teachers with suggestions about practical classroom strategies to increase instructional time. However, such

accessibility is not available to teachers in more geographically isolated areas. The McRae Report (1996) calls for “equitable distribution of available resources regardless of location or setting” (p. 5). This equitable access is not currently being granted to teachers in isolated schools (Lyons et al., 2006), and teachers feel the level of support to be insufficient (McLean, 2008). Further, Lyons et al. (2006) reported that teachers in isolated schools felt disadvantaged, and experienced a sense of professional isolation and a need for greater access to professional learning.

2.4.1 Current Support Services

Current support services, in regard to behaviour, in isolated schools are provided by School Learning Support Officers (SLSO), in line with the new Every Student Every School program (NSW DEC, 2012). These support officers may or may not have specialist behavioural experience and qualifications. At the time of this study teachers were supported by Itinerant Support Teachers (Behaviour: ISTB) (specialist behaviour teachers) based at large regional centres. These itinerant teachers needed to stretch themselves between all the isolated schools within their region, travelling to a number of schools in the region, generally just once or twice a term. The region that was used for this study covers approximately 385,000 square kilometres (km), and the distance between the regional office and the schools can be up to 756km (a 7.5 hour drive). The distance between schools and the office makes the provision of specialist services problematic (McLean, 2008). Since the

conceptualisation and implementation of this thesis, The 'Every Student, Every School' (ESES) learning and support framework was implemented by the NSW Department of Education and Communities in 2012 (NSW DEC, 2012). This framework was developed to meet the specific needs of students with disabilities within the NSW public school system. The changes implemented in answer to ESES, including the removal of specialist itinerant support teachers and the distribution of the ISTB duties to mainstream generic support teachers, began after the Bringing It To The Teachers (BITTT) study period, are currently being assessed. However, there is still a need for a change in service support and to professional learning models which are not effective for teachers in isolated settings. There is a logistical need to utilise the expertise of the specialist behaviour teacher, or to impart their knowledge and skills, in a way which empowers teachers, reduces stress and ultimately retains these teachers in the profession. This can be achieved through effective support and professional learning.

2.4.2 Provision of professional learning opportunities for isolated teachers

Teachers of students with behaviour disorders need to know more about the disorder to become empowered and effective teachers of these students (Salend & Sylvestre, 2005). Borko (2004) suggests that one promising model is to design research and refine, using design experiments, a program of professional development in a professional learning community. Dede, Ketelhut, Whitehouse,

Breit and McCloskey (2009) support research for professional learning that is more innovative with online programs and suggests design-based research as a methodological approach for this research. Opfer and Pedder (2011) suggest that effective professional learning needs to be “sustained and intensive rather than brief and sporadic” (p. 384). These researchers also suggest that teacher professional learning is most effective when it is contextually situated (Opfer & Pedder, 2011; Borko & Putnam, 1997; Lave & Wenger, 1991). Another consideration that needs to be acknowledged is that professional learning is time consuming and needs resources to be effectively utilised. Therefore it is necessary to provide quality programs that assist in building teachers’ capacity, such as an innovative online resource based on a CoP, which could be available to teachers at all times. One of the resources rarely included in professional learning is the building of collaborative relationships with teachers in similar contexts. The innovative CoP can achieve not only this, but can also increase knowledge sharing (Vescio, Ross & Adams, 2008) by making resource access equitable across NSW.

Mayer (2006) suggests that providing access to professional learning opportunities would assist teachers to develop and/or rebuild a professional identity. For teachers in isolated schools such identity construction could be hampered by the lack of opportunities for professional interactions. The potential for an innovative on-line CoP to meet many of the needs of isolated teachers of students with

oppositional and defiant behaviours needs to be explored. The innovative model of teacher professional learning for isolated teachers proposed in this research has the potential to lower stress, increase knowledge and strategies, encourage beginning teachers to remain in the profession and develop a stronger teacher identity.

McLean's (2008) research outlined the need for more support for teachers in isolated schools teaching students with ODD. However, in view of the constant restructuring of the limited services currently available under the NSW DEC ESES framework, there is a need for a new innovative model. This may be achieved with the provision of a dedicated interactive online learning environment (website) as a vehicle for delivering professional learning and specialist support, as well as building a professional learning community for teachers in isolated schools to readily access. This would enable the ISTB support staff to provide support from their centralized location so that travel out to the schools would only be required if the need for direct observation arose. Also, teacher professional learning can be customised for each individual teacher without them having to leave their base school.

Previous research cited in this review has outlined the importance of understanding and developing strategies to effectively deal with the behavioural disorder ODD. This disorder has such a negative impact on classroom life and the working conditions of teachers and students that it needs urgent early intervention. As

previously stated this disorder does not only impact on the individual student, it impacts negatively on the other students, the learning environment and heightens the stress of teachers, who in remote and rural communities are increasingly likely to be beginning teachers.

The review has also highlighted that this disorder has been assessed by teachers as imposing a considerable amount of stress, because of the sheer pervasiveness, co-morbidity, intensity and lifetime duration of the disorder. Because of the NSW government's policy of inclusion and the newer policy developments under ESES, teachers are more likely to have students with psychiatric disorders such as ODD in their classrooms. The DEC places the responsibility for the learning of all students primarily on the teacher. Although teachers have identified these students as causing them the most stress, the teachers in these schools are likely to have limited support and feel geographically, emotionally and professionally isolated when they are confronted with the problems exhibited by students with ODD. There is little research in a NSW context that examines this problem from the perspective of the teachers in rural and remote schools.

Thus, the purpose of this research was to address the gap in the literature identified by this review on the needs of teachers in isolated schools on gaining support and professional learning in relation to the students with ODD. This study explores an

innovative paradigm for meeting the needs of teachers in remote communities with students with oppositional and defiant behaviours. This research identified the specific oppositional and defiant behaviours that, from the teacher's perspective, needed to be addressed in an isolated classroom and identified the design principles for a practical solution that supported the teachers in isolated schools. This solution sought to assist in providing them with knowledge about the disorder and strategies to alleviate stress by the provision of the support needed to produce an optimal learning environment for the students with oppositional and defiant behaviours.

2.4.3 Online Learning Environments and Communities of Practice

In looking at developing an online learning environment to support a CoP, a range of research examining the principles and features required for successful online learning was assessed. One imperative aspect of a successful online learning environment that has been proposed was to have a clear framework and an explicitly stated purpose of the community (Peterson, 2009). This allows potential members to judge the value of joining the community, from the outset. Another important facet was to seek stakeholder collaboration, or input, into the development of the site, to ensure the contextual relevance of the design and greater levels of significance and participation (Wang & Hannafin, 2009). Additionally Hung and Chen (2001) suggest "situatedness, fostered by contextualising activities" (p. 7), which is important, as issues relevant for teachers

in metropolitan schools may not be relevant for teachers in rural and isolated schools.

Hung and Chen (2001) further suggest that commonality fostered by shared interests is a significant principle of a CoP. This too is important because it allows focus and demonstrates a valid reason for participants to contribute. In this study the commonality was teachers in isolated schools for students with oppositional and defiant behaviours.

CoP have been used to varying degrees in educational research, with a range of participatory levels. Wenger et al. (2002) highlights the importance of varied participation levels, suggesting that they should range from core group members, to peripheral participants. Instructors act here as facilitators (Swan, 2002), with interdependency being fostered by varying levels of expertise (Hung & Chen, 2001). Wenger et al. (2002) also found that a rhythm of activity is essential, and that events need to be scheduled regularly to draw people back to the site. Bussye, Sparkman and Wesley (2003) similarly argue that a cycle of activities is an important tenet of a successful CoP. Swan (2002) discusses the importance of having clear navigation and consistent layout as an element of usability, whilst Eady and Woodcock (2010) suggest ensuring reliability, suitability and accessibility. The findings from the above studies were taken into consideration in the planning phase

when identifying design principles of an online CoP.

2.5 Theoretical approach

The Sociocultural Approach and Community of Practice (CoP) paradigm were employed as a conceptual framework for the design of the Bringing It To The Teachers (BITTT) online learning environment and associated community. A CoP is defined as a group of “people who share a concern, a set of problems or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an on going basis” (Wenger, et al., 2002, p. 4). Learning and interacting in a CoP “reflects the fundamentally social nature of learning” (Wenger, 2011). This study utilises sociocultural theory (Vygotsky, 1978) as the theoretical underpinning and the conceptual framework to discuss social learning that takes place in a CoP, as described by Wenger et al. (2002) and which is further explored here. It also draws on Activity Theory (Engeström, 1998), which conceptualises technologies as a tool to enhance educational goals of both the educator and the learner in a social learning environment (Verenikina & Gould, 1998).

2.5.1 Sociocultural Approach and Activity Theory

Sociocultural theory is an umbrella framework covering a number of important

theories derived from the work of Lev Vygotsky (1978). One such theory is that of social constructivism (Daniels, 2008). It suggests that people construct knowledge based on prior experiences and social negotiation through social interactions and that these social interactions within a 'community' are used for the "continuity and development of knowledge" (Daniels, Cole, & Wertsch, 2007, p. 82).

Building on Vygotsky's work, a number of theories and models were developed which informed the study: Activity Theory (Engeström, 1998), Community of Practice (Wenger et al., 2002) and Situated Learning (Lave & Wenger, 1991). In seeking to explore the participation of members of the Bringing It To The Teachers (BITTT) site, this study employed Activity Theory.

Activity Theory provides perspectives on human practices as a social phenomenon at various levels of functioning (Barab, Barnett, Yamagata-Lynch, Squire, & Keating, 2002). Activity theory model (Engeström, 1998) suggests a structure of activity, which includes a number of interrelated components such as the subject, the object, the tools, the community, and normative societal rules (Engeström, 1998). In a collective activity the subjects have a common interest or thread, the 'object', and various 'tools' are used to gather and socially construct knowledge. It is further theorised that socially constructed knowledge is used to meet the needs of its subjects (Engeström, 1998).

In the current study the teacher is a subject who engages in the activity of PD driven by the goal of professional learning, where the on-line environment of BITTT is the tool. The interactions examined were between the teachers (subjects) the professional learning (object), a code of conduct (rules), the experts and each other (division of labour) and the Community of Practice (community) (see Figure 2.1).

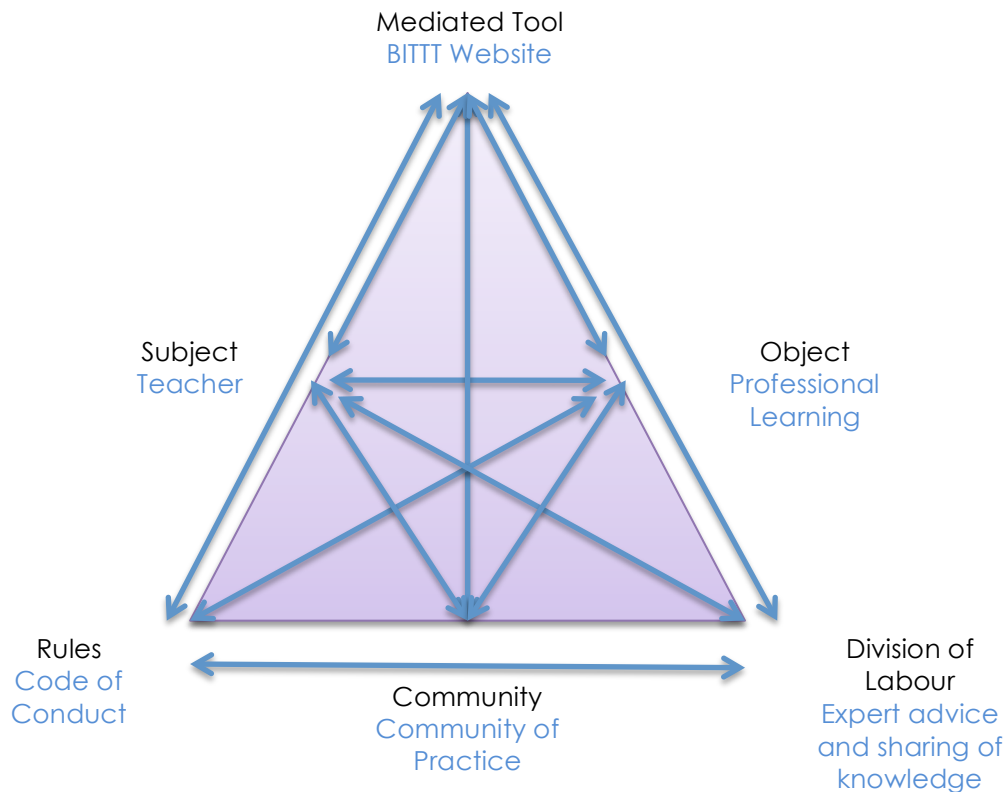


Figure 2.1: Activity Theory Model as it applies to BITTT

The interactions between the various components within the activity model can either hinder or assist the achievement of the activity goal (or object) (Yamagata-

Lynch, 2007) and teacher professional learning (object). The interaction between the subject and the community (participants in the online learning environment, BITTT) plays a significant role in the level of success of professional learning and teachers' knowledge acquisition. These interactions, which can be purposeful and/or inherent in human activity (Engeström, 1998; Yamagata-Lynch, 2007), can cause tensions between the elements of the activity structure.

Barab, Schatz and Scheckler (2004) describe the activities that happen within the community as sub-functions of the community activities. In relation to this study, in the BITTT model the teacher professional learning is one element of the community activity. The participants themselves, are part (or 'another element') of the community activity, so in fact all of the interactions are a sub-function of the overall experience. When making modifications to the tool, this study took into consideration the apparent and potential tensions between the structural components. Specifically, with every iterative modification to the BITTT site, consideration was given to the participant learning styles, the professional learning that was taking place, and the rules within the environment such as using supportive language and keeping student confidentiality.

2.5.2 Community of Practice and Situated Learning

When exploring the concept of Communities of Practice, Wenger et al. (2002) discussed the different forms of such communities including spontaneous or intentional, and co-located or distributed. For the purpose of this research, the BITTT CoP is conceptualised as intentional and created for a particular purpose for a group of people who already had similar goals and experiences of professional learning in teaching children with oppositional and defiant behaviours. Because of the isolated nature of the participants' location, a co-located CoP was not sustainable, or even possible, and a distributed CoP needed to be purposefully created and supported through the design of an online environment.

Communities of Practice have been demonstrated to be effective in engaging teachers in a "dialogue about their practice" that can be "both transforming and transformative", and further allows them to develop from being "knowledge receivers" to participate in an environment where they can be "knowledge producers" (Hibbert, 2008, p. 127). For teacher professional learning to be sustainable in isolated areas, it is important for teachers to socially construct their knowledge. As teacher educators we extol the benefits of socially constructed learning within the classroom, however, traditional methods of teacher professional learning are still delivered in a "transmission of information" manner (Hibbert,

2008, p. 130). Similarly Koch and Fusco (2008) state that “informal collegial interactions” (p. 1) within a CoP can affect a teacher’s professional growth. This issue is particularly important for isolated areas where teacher’s professional growth can be impeded by the geographic isolation. This research investigated the fledgling establishment of an online CoP for teachers in isolated schools of students with oppositional behaviours.

A CoP as previously defined is a group of people who share a specific problem or passion about a topic, and who interact and socially learn together (Wenger, et al., 2002). As demonstrated in chapter 5, this aligns with the participant group, as they are a diverse groups of teachers in isolated schools, and the concerns they have are the lack of support and the topic is meeting the needs of students with oppositional and defiant behaviours. Research shows that a great potential for online communities is the promotion of “ongoing teacher interaction” (Hur & Brush, 2009, p. 279). It has been demonstrated that encouraging such interaction and providing continuous support for teachers are key elements to successful teacher professional learning. Further, the online community is viewed as an innovative model of professional learning (Barab, Kling & Gray, 2004; Hur & Brush, 2009).

Effective communities of practice involve the members participating within the community at varying levels. First at the peripheral level, then more involved, as

they feel empowered to share knowledge with the other community members (Daniels, 2008). The participants have a variety of interests, backgrounds and abilities, but one common interest, practice or purpose forming the heart of the community (Lave & Wenger, 1991). In the case of this study that commonality is the teaching of students with ODD like behaviours.

Sociocultural theory suggests that when participants in a CoP are new, they are drawn to the sociocultural practices of the community with initial exploration, which then encourages full participation (Lave & Wenger, 1991). Furthermore, Lave and Wenger (1991) suggest that the “meaning of the learning is configured through the process of becoming a full participant in a socio-cultural practice” (p. 29). In analysing the way teachers participate in a CoP Yildrum (2008) noted that “learning develops from experience and social interaction and is the function of the activity, context, and culture in which it occurs, that is, is situated” (Lave, 1996 as cited in Yildirim, 2008, p. 236). It is learning in authentic “real life situations” that makes situated learning theory important for this study (Vialle, Lysaght & Verenikina, 2005, p. 70).

Communities of practice use a supportive culture to encourage mutual engagement and share knowledge for a common purpose (Lave & Wenger, 1991 p. 28). Members of these communities share “repertoires of tools, stories, routines and

words that the community has generated or developed” and that this “repertoire becomes a part of the community’s practice” (Hur & Brush, 2009 p. 24). In the current study the teachers in isolated schools and the behaviour expert share their knowledge and skills as a community.

An online learning environment model of professional learning, which eliminated the need for travelling by allowing teachers to remain in their authentic settings, while participating in the CoP, was developed and trialled in this study. All participants in the current study participated in the on-line learning environment as part of their on-going professional practice. The features of the designed learning environment supported situated learning. The function of the activity was to investigate current issues and specific cases, which were addressed and discussed in context.

2.5.3 Online Community of Practice

Wenger et al. (2002) discussed virtual CoP as an option for members who are unable to physically participate in regular learning as a group. A significant body of research describes the advantages of virtual or online CoP as a model for professional learning, but also cautions about the complexities involved in designing an effective online CoP (Kirschner & Lai, 2007; Barab et al., 2004).

There are two main forms of online communities - 'communities of practice' and 'learning communities' (Wubbels, 2007). The main purpose of the latter is learning rather than practice. The Bringing It To The Teachers (BITTT) site combines both these forms, because the members of the community in this site are a group of practitioners who need professional learning to improve their practice with students with behavioural disorders.

In assessing a wide range of online communities Amin and Roberts (2008) described a spectrum of online communities of practice from the "large, loosely structured" to the "small, purposeful and managed groups" (p. 363). The BITTT community can be described as the latter. Amin and Roberts (2008) further suggested that these small purposeful groups are successful with the purposeful and sustained efforts of teachers who are "active and knowledgeable e-forum managers", who support "question and answer mode of engagement" and use "prompts to encourage reflection" (p. 364). Participants in the online community can engage with the knowledge, reflect on their practice to reconceptualise the ideas into their own context, thus improving collaborative knowledge building (Seddon & Postlethwaite, 2007). When analysing the tacit knowledge in online learning, Oztok (2013) discussed the potential for identity development through encouraging participants sharing their values, ideas and experiences. Such sharing was an important focus of the BITTT site.

2.6 Summary and conclusion

This literature review analysed current research in relation to two major areas relevant to this current study: 1) the complexities of teaching students with oppositional behaviours in mainstream classrooms and the needs of the teachers in isolated schools for professional learning and 2) overview of existing models for professional learning and the solutions within the sociocultural theoretical framework that supports this research project.

Firstly, the literature review outlined the current research on issues surrounding teaching students with oppositional behaviours, particularly in isolated schools. There is evidence of a growing incidence of behaviour disorders within mainstream classrooms, and the behaviour of these students can impact not only on their own learning, but also on the other students, the learning environment, teaching staff, and other members of the school community. It demonstrated that these behaviours cause disruption to the classroom environment and increased stress for the teachers. The review of the literature demonstrated the complexities of teaching these students, in relation to the issues associated with teaching in isolated schools.

The review provided an insight into the needs of the teachers in isolated schools,

evaluating research which demonstrated that teachers in isolated communities, including those in NSW, are in need of greater level of support than they are currently receiving. Additionally, it found that access to teacher professional learning, in isolated schools, is limited, with restricted access to behaviour professionals in support classes, behaviour units or specialist centres. Further, the need for an innovative design solution was demonstrated and the theoretical underpinnings were highlighted.

Research highlighted that teachers, particularly in isolated schools, are not receiving the support they need in order to deal with students with oppositional behaviours. Teacher support in isolated schools and the impact of the availability of teacher professional learning is important as teachers in isolated schools are mandated to provide the same level of education as metropolitan teachers. However, teachers in isolated schools do not have the same access to professional learning, resources or support services.

The analysis of existing models for professional learning for isolated teachers was discussed and research on developing a model of professional learning analysed to uncover the most effective design principles of developing a CoP for teachers in isolated schools. This review identified the role online learning can play for teachers in isolated schools, in providing more equitable access to professional

learning and resources. This is significant in a climate where education providers look for cost effective, efficient means of delivering professional learning to teachers in isolated schools.

Finally, this chapter provided a discussion of the theoretical underpinning of this research, identifying the sociocultural approach and activity theory that was used to support the CoP for teachers in isolated schools of students with oppositional behaviours. This combination of theoretical approaches has been integrated with design-based research in other research projects (Wang, Christ & Chiu, 2014; DaSilva Iddings & Rose, 2012; van Schaik, van Oers & Terwel, 2010; Eady, 2010; Peterson, 2009; Hickey & Zuiker, 2005) and found to be useful. The nature of online learning lends itself to the sociocultural approach, and the conceptual framework of CoP allows for the identification of key elements that need to be implemented for the successful delivery of an online learning environment that contains a CoP.

Methodology

3 METHODOLOGY

The purpose of this research was to develop design principles for an online Community of Practice (CoP) for teachers in isolated schools. This chapter will describe the participants, context, selection methods and criteria. This chapter will also describe the methods of data collection and data analysis, as well as ethical considerations.

3.1 Research design

This study employed the Design-Based Research (DBR) approach (van den Akker et al., 1999; Creswell & Plano Clark, 2007; McKenney & Reeves, 2012) as an overarching research framework. “The ultimate goal of design-based research [is] to build a stronger connection between educational research and real-world problems” (Amiel & Reeves, 2008, p. 34). This approach was used by the researcher as a guide to analysis and the development of solutions to the problem faced by teachers in isolated schools, which is a lack of access to professional support.

DBR, also known as Educational Design Research (McKenney & Reeves, 2012), is a research methodology used to develop and refine, a solution to a specific problem in a naturalistic setting (Barab & Squire, 2004). The development of a ‘solution’ is

an essential component in a ‘problem of practice’ in an authentic educational setting (McKenney & Reeves, 2012; Joseph, 2004). When applying design-based research to an educational context, it is imperative that the focus is on the “development of sustained innovation in education” (Bell, 2004, p. 251). Innovative design in educational practice requires a close interrelation between theory and practice (van den Akker, 1999). DBR was used in this study to reflect upon the issues faced by the teachers in isolated schools and used these reflections to develop design principles for a technologically based solution, which ultimately led to the establishment of an interactive website which facilitated the CoP.

The design of the solution evolved throughout a number of iterations required by the DBR methodology, moving from an inquiry, to refining the solution and finally to evaluation of the completed solution (DBRC, 2003; Wang & Hannafin, 2005; McKenney & Reeves, 2012). The local impact of this solution was evaluated through iterative cycles of testing and refinement then the broader impact of the intervention was evaluated (Creswell & Plano Clark, 2007).

This research study employed a variety of qualitative methods in the constructivist paradigm, which allows for the acknowledgement of the interactions between the researcher and participants to construct knowledge (Mertens, 2005). The below figure shows how DBR applied at various stages of the four-phase BITTT project (Figure 3.1).

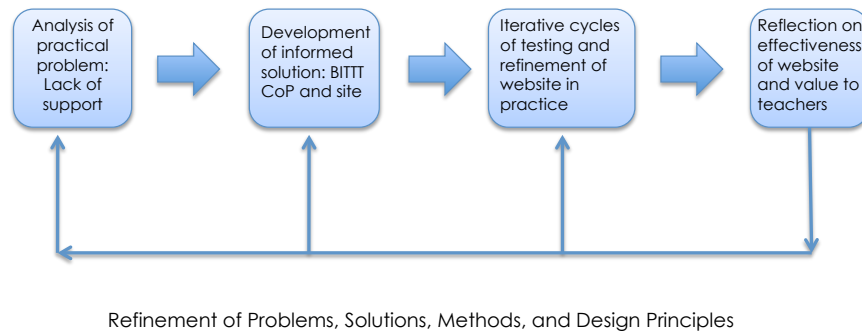


Figure 3.1 DBR as it applies to BITTT (Adapted from Reeves, 2006, p. 59)

3.2 Participants

The participants for this research were 15 teachers of students with oppositional and defiant behaviours in mainstream classrooms in schools in rural areas of NSW. They were purposefully chosen to represent teachers in isolated schools catering for students with oppositional and defiant behaviours. Purposive sampling allowed the researcher to select participants who fit within the research criteria (Creswell & Plano Clark, 2007; Punch, 2009).

In order to select appropriate teacher participants, schools were selected using data from the District Guidance Officer in one region in NSW (see below). The criteria for selecting schools to participate in the study included:

- 1.) The school fit the criteria as a Country Area Program (CAP) school, including meeting the isolation index criteria.
- 2.) There was no specific 'behaviour unit' in the school.
- 3.) There were students with ODD (diagnosed or undiagnosed) enrolled in mainstream classrooms.

A presentation was made to all staff at the five identified schools and fifteen participants were recruited. These participants self selected on the proviso that they had students with oppositional and defiant behaviours enrolled in their classes.

The spread of teacher participants across schools, with multiple participants from some schools and single participants from one is characteristic of the context, in that there are a number of one-teacher schools across NSW. The teacher participants included eight inexperienced teachers (with 3 years or fewer of teaching experience) and three very experienced teachers (with over 14 years experience). There were four male teachers and eleven females. Table 3.1 outlines the participant and school profiles and which phases they participated in. It was encouraging that over 73% of participants utilised the Community of Practice throughout at least three phases of the research period.

Table 3.1: Participant and school profile

| School | Size * | Participant | Gender | Experience (years) | Participating phases |
|--------|--------|-------------|--------|--------------------|----------------------|
| A | 211 | 1 | F | 14 | 2, 3, 4 |
| B | 146 | 2 | F | 1.5 | 1, 2, 3, 4 |
| | | 12 | F | 6 | 2, 4 |
| C | 316 | 3 | F | 3 | 2, 3, 4 |
| | | 4 | F | 5 | 2, 3, 4 |
| | | 11 | F | 28 | 2, 3, 4 |
| | | 5 | M | 4.5 | 2, 3, 4 |
| | | 6 | F | 30 | 2, 3, 4 |
| D | 158 | 7 | M | 2.5 | 2, 3, 4 |
| | | 8 | F | 1.5 | 2, 3, 4 |
| | | 9 | M | 8 | 2, 3, 4 |
| | | 13 | F | 3 | 2, 4 |
| E | 210 | 10 | F | 7 | 2, 3, 4 |
| | | 15 | F | 10 | 2, 4 |
| | | 14 | M | 2.5 | 2, 4 |

• Student numbers from the *My School* website (ACARA, 2012)

3.3 Data Collection procedures

The methods of data collection in this study included a focus group and a series of semi-structured phone and face-to-face interviews, combined with questionnaires, which focused on specific site usage questions. These methods of data collection were used to inform each of the phases of DBR, where phase one utilised the focus group, phase two utilised the data from the initial phone interview, phase three utilised the iterative cycle questionnaires and phase four the

final, face-to-face interviews. Semi-structured interviews and online questionnaires were designed to inform the iterative cycles of improvement and were conducted during each of the iterative cycles.

The data collection commenced with initial interviews, which were conducted via phone at a mutually convenient time in mid 2011. The BITTT site was developed and launched in September of 2011, with the data collection period, including the iterative cycles lasting nine months. Final interviews were conducted face to face in July 2012 at the participant schools. The online questionnaires were conducted throughout the nine-month data collection period to inform the iterative cycles. A final iterative cycle of improvement was carried out during December 2012 and January 2013. This involved an extensive redevelopment of the solution using a different platform as per the feedback from the participants.

3.4 Research methods

Below is a summary of the research methods and instruments used for each phase of this study.

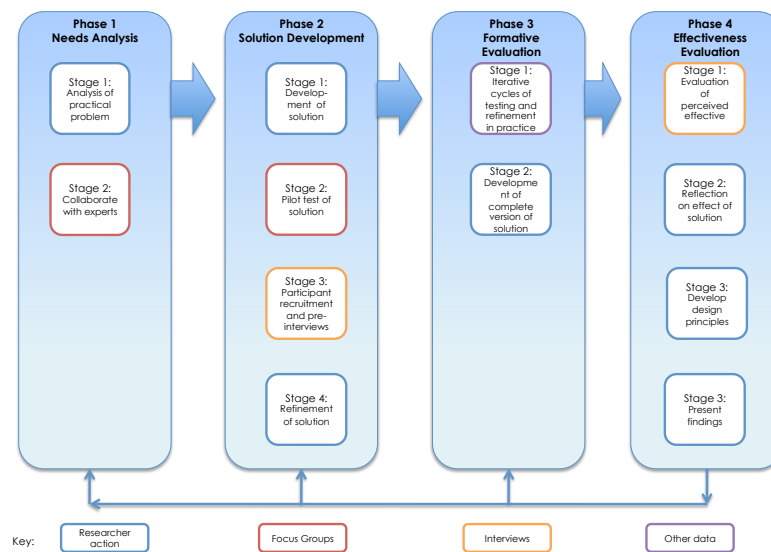


Figure 3.2 Phases of the BITTT research project (see appendix 7 for a larger version)

3.4.1 Phase One

A previously conducted analysis of the needs of teachers in isolated schools with students with ODD (McLean, 2008) formed the foundation for the first phase of the research. This was enhanced by consultation with a panel of experts in the field and an extensive literature review.

The panel of experts were recruited from the local region. It consisted of three exemplary educationalists that specialise in managing students with emotional behaviour disorders. Expert One is the Head Teacher at a large support unit for students with Emotional Disturbance and Behaviour Disorders, she has been

teaching for over 30 years and specialising in teaching these students for 15 years. She has worked in consultancy role at regional level and lectured at university. Expert One also kindly donated her time and expertise as “Dr Behaviour Expert” on the BITTT site. Expert Two is the Head Teacher at a school which caters solely for students with extremely challenging behaviours and emotional disturbances. He has a doctorate in behaviour disorders and has been teaching these students for over 35 years in various capacities, including a wilderness program, both here and overseas. He also contributes to furthering teacher education by coordinating and teaching about behaviour at postgraduate and undergraduate level. Expert Three has a doctorate in teaching students with behaviour disorders and, at the time of interview, was the principal of a school with a considerable number of students with behaviour disorders. He has 30 years experience in teaching these students.

Table 3.2: Phase One research methods and instruments

| Phase One: Needs Analysis | | | |
|---|--|--|---|
| Stage | Method | Data collection | Data analysis |
| Stage 1: Analysis of practical problem | Data from the McLean (2008) study analysed to identify teacher needs | Complete | <ul style="list-style-type: none"> • Thematic analysis • Development of website criteria |
| | Literature and website reviews | Books, journals, websites, conference papers | <ul style="list-style-type: none"> • Comparative analysis and review |
| Stage 2: Collaboration with experts in the field | Focus group of experts | Audio recorded focus group session | <ul style="list-style-type: none"> • Transcription • Thematic analysis • Document analysis |

3.4.2 Phase Two

Phase Two of the research involved the development of the solution (website). The website was built in Edmodo, a blog style site specifically designed for teachers and students. This platform was chosen after consultation with the Rural and Distance Education (RDE) Collaborative Technologies Officer, as the most appropriate for this cohort of participants. The participants were interviewed and any additional needs considered. This initial interview data was used to refine the website during stage three of Phase Two, which was tested for efficacy with a focus group. Further refinements with this data occurred prior to the launch.

Table 3.3 Phase Two research methods and instruments

| Phase Two: Solution Development | | | |
|---|---------------------------------|------------------------------------|--|
| Stage | Method | Data collection | Data analysis |
| Stage 1: Development of solution | Website Development (Edmodo) | Feedback from reviewers | <ul style="list-style-type: none"> Meet website criteria |
| Stage 2: Preparation of participants | Initial interview | 15 audio recorded phone interviews | <ul style="list-style-type: none"> Thematic analysis |
| Stage 3: Pilot test of solution | Focus group of testers/experts | Feedback from focus group | <ul style="list-style-type: none"> Transcription Thematic analysis CCC matrix |
| Stage 4: Refinement of solution | Website Re-Development | Feedback from reviewers | <ul style="list-style-type: none"> Meet website criteria |

3.4.3 Phase Three

Phase Three of the research entailed the iterative cycles of testing and refinement of the solution. These iterations were carried out as the solution was being used. Questionnaires were collected and used in the iterative cycles of testing and refinement. Final interview data was collected to reflect on the effectiveness of the solution in a practical environment. Triangulation data was also collected in the form of online questionnaires, website logs, and researcher observations and field memos. The data was examined utilising activity theory for issues and problems and feedback from the participants in order to identify areas for improvement. Literature was consulted, and improvements were then carried out and tested in the next iterative cycle.

Table 3.4 Phase Three research methods and instruments

| Phase Three: Formative Evaluation | | | |
|---|--|--|---|
| Stage | Method | Data collection | Data analysis |
| Stage 1: Iterative cycles of testing and refinement of solution in practice | Web-based questionnaires Discussion forum Website user feedback Expert feedback | Questionnaires Postings Postings/ emails Postings/ User Diary | <ul style="list-style-type: none"> • Thematic analysis • CCC matrix • CCC matrix • CCC matrix • Descriptive statistics |
| Stage 2: Development of complete version of solution based on iterative cycles | Website re-development (V2 & V3) | Review of all data collected | <ul style="list-style-type: none"> • Transcription • Thematic analysis • Document analysis • CCC matrix • Descriptive statistics |
| Stage 3: Redevelopment of the solution in a new platform | Website re-development (V4) | Online questionnaire | <ul style="list-style-type: none"> • Thematic analysis • CCC matrix • Descriptive statistics |

3.4.4 Phase Four

Phase Four was the evaluation phase of the research and involved a final round of interviews with the participants. These interviews examined the fledgling CoP and the social interactions and learning of the participants from a sociocultural perspective. The data from these interviews and the data collected from the trial of the solution was analysed and presented in Journal articles, conference presentations and this thesis.

Table 3.5 Phase Four research methods and instruments

| Phase Four: Effectiveness Evaluation | | | |
|---|-------------------------------------|--|--|
| Stage | Method | Data collection | Data analysis |
| Stage 1: Evaluation of perceived effectiveness | Final interview Discussion forum | 15 audio recorded interviews Postings | <ul style="list-style-type: none"> • Thematic analysis • CCC matrix |
| Stage 2: Reflection on effectiveness and value of solution | Qualitative analysis | Review of all data collected | <ul style="list-style-type: none"> • Transcription • Thematic analysis • CCC matrix • Descriptive statistics • Thesis writing |
| Stage 3: Redevelopment in a new platform | Online questionnaire | Questionnaire | <ul style="list-style-type: none"> • Thematic analysis • CCC matrix |
| Stage 3: Presentation of findings | Conference presentations | Feedback from reviewers and presentation attendees | <ul style="list-style-type: none"> • Document revisions |

3.5 Data Analysis

The data collected during all the phases of this study were thematically analysed. The raw data were analysed and placed into logical, meaningful categories, which were further examined holistically to extract the pertinent information (Braun & Clarke, 2006). The data were put into a coding matrix developed from the 'Conceptually Clustered Matrix' (Miles & Huberman, 1994, p. 128). This matrix (Appendix, 8 & 9), derived from the conceptual figure below, used groupings from design-based research principles to make clear connections between the data and the design of the learning environment. Furthermore, it allowed for the relationships within the data to be uncovered and for cross-comparisons to be made (Miles & Huberman, 1994). Triangulation and member checking to ensure validity corroborated the data at each collection point. Confirmability and reliability in design based research are achieved through the iterative cycles of the research (McKenney & Reeves, 2012). The below figure is a diagrammatic representation of the major themes identified in the study and how they fit together. There were six major topics that flowed into either requirements of the teachers or the website. These were: the skills teachers required to manage students with oppositional and defiant behaviours, the resources they required to accomplish it effectively, the teacher professional learning that they needed/ desired, the support that they required, the elements of the Community of Practice that could assist them to

achieve their goals and the stressors that prevented them from doing so. Data from the questionnaires, interviews and feedback via the learning environment were analysed and employed in the iterative cycles of solution improvement in Phase Three and Four of the research.

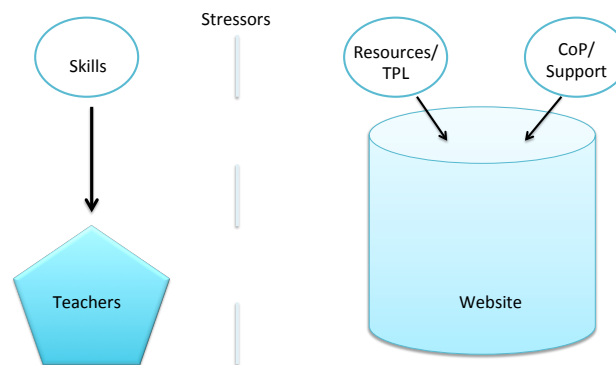


Figure 3.3 Conceptual diagram of the coding matrix for BITTT

At the completion of the iterative cycles further analysis allowed for a more extensive discussion of the major themes identified within the data using extensive quotes and rich detail to provide evidence (McKenney & Reeves, 2012). This study utilised the interview data to provide this rich detail and used extensive discussion in order to demonstrate the support needs of the participant teachers and to enhance the solution’s ability to meet these needs.

The below table demonstrates how the data collected was analysed and utilised in the phases of the research. The preliminary study (Mclean, 2008) was utilised as the basis of the Phase One needs analysis. This data was triangulated with the

reflective journals kept by the participant teachers and collected at interview. The reflective journals were utilised during interview as a stimulus to identify problematic behaviours within the classroom. This data was further compared to current literature and the data gathered from the expert panel. This led to the development of the initial design principles of the BITTT site.

Phase Two of the research utilised the initial interviews of the BITTT participants. The participants also completed the reflective journal in the week leading up to the interviews. These journals were again used as stimulus for the participants to identify and discuss patterns of behaviour in their students. Where consent was given, these journals were collected as documentary evidence. This interview data was charted in the conceptually clustered coding matrix (App 9) this was then compared to the Phase One data, the expert interviews and the current literature.

Phase Three utilised online questionnaires to garner user feedback on the usability effectiveness, strengths and weaknesses of the site and CoP. Each of these questionnaires were analysed using the coding matrix to identify themes emerging from member feedback. An analysis of the posts made by participants was also carried out at each iterative cycle, to ensure the validity of the feedback. These themes were then compared to literature on online learning environments and CoP. Revisions were made to the site at each iteration in direct response to the member feedback.

Phase Four used the final face-to-face participant interviews. These interviews were conducted with all participants, analysed using the coding matrix (App 9) and validated with member checking and using the user post analysis. This data was then combined with the Phase One, Two and Three data to identify the recurrent themes and the most important aspects of the BITTT project for teachers in isolated schools. This data was further compared to current research on CoP to inform the final design principles.

Table 3.6 Data Collection, Analysis, Use and Triangulation

| Data | Analysis | Utilised | Triangulation | Outcome |
|----------------------|------------------------|-----------------|---|---|
| Prelim study | Thematic | Phase 1 | Expert/ reflective journals/ lit review | Initial criteria |
| Expert panel | Thematic ccc matrix | Phase 1 | Lit/ cross comparison | Website criteria/ initial design principles/ list of strategies & resources |
| Initial interview | Thematic ccc matrix | Phase 2 | Prelim findings/ lit review/ expert | Clarified criteria/ refined site |
| Questionnaire 1 | Thematic ccc matrix | Phase 3 | Site usage/ User feedback/ post analysis/ lit | Site revisions V2 |
| Questionnaire 2 | Thematic ccc matrix | Phase 3 | Site usage/ User feedback/ post analysis/ lit | Site revisions V3 |
| Questionnaire 3 | Thematic ccc matrix | Phase 3 | Site usage/ User feedback/ post analysis/ lit | Site revisions V4 final |
| Final Interview | Thematic ccc matrix | Phase 4 | Site usage/ User feedback/ post analysis/lit | Final design principals |

3.1 Limitations

One limitation of the study was the small sample size. The outcome of this study will not be generalisable as of the fifteen participants maintained throughout the study, only ten participated in the CoP. However, if there is a significant benefit to the participant teachers, the DEC may choose to use this design to test on a larger scale.

The online learning environment was a closed environment available only to the participant teachers, researcher and expert. This prevented a true CoP from developing, as would happen in an authentic setting.

3.2 Ethical considerations

Prior to the commencement of the data collection, ethical approval was obtained from both the University of Wollongong HREC and the NSW Department of Education and Training (now Department of Education and Communities). Participants were required to give written consent prior to participating in the

study. Participants were able to withdraw from the study at any time without penalty.

All participants and schools were issued with pseudonyms (numbers). The data was marked with the pseudonym only. All website posts have been kept confidential and only the information that pertains to the website were extracted. All data is kept in a locked cabinet in the researcher's office within the University.

3.3 Conclusion

This study utilised DBR to identify the design principles for an online CoP supporting teachers in isolated schools in NSW. This chapter described the methods employed to collect and analyse the data for the study. It also described the participants, participant selection procedures, and ethical considerations. The analysis, findings and discussion emerging from the data will be discussed in the subsequent chapters.

Article One: Are We Doing Enough?

Assessing the Needs of Teachers in Isolated Schools
with Students with Oppositional Defiant Disorder in
Mainstream Classrooms.

4 ARTICLE ONE:

This chapter comprises a published article: McLean, F., & Dixon, R. (2010), Are We Doing Enough? Assessing the Needs of Teachers in Isolated Schools with Students with Oppositional Defiant Disorder in Mainstream Classrooms. *Education in Rural Australia*, 20 (2), pp. 53-62.

This article covers the first phase of the research - the analysis of a practical problem. It examines the needs of teachers for professional development and support in isolated schools and for social skills training for this cohort of students, for example: *“he is an isolate... his social skills, they totally lack ... he does not have much to do with anyone in the class”* (Teacher B). This paper was written prior to the commencement of this study, but was published during the candidature and utilised as the basis of the first phase of the research study as shown below. My role is lead author of this paper, with my primary PhD supervisor as co-author. I carried out this research project and my co-author provided contribution through collaborative discussions and critical revisions.

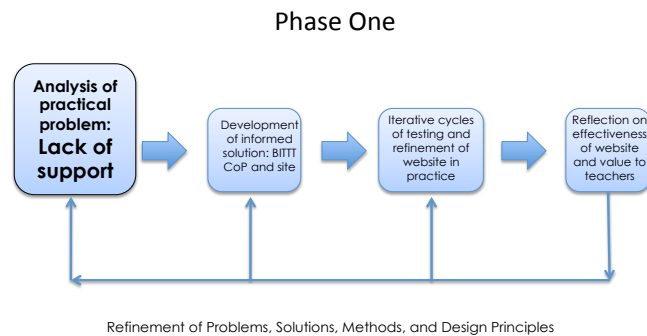


Figure 4.1 BITTT phase covered in this article

4.1 Abstract

The Vinson report (2001) into public education highlighted the growing incidence of behavioural problems within the NSW public school system. One disorder that is currently causing particular concern is Oppositional Defiant Disorder (ODD) as the outcomes for students with ODD who do not receive intervention are dire. Barcalow (2006) claims that without intervention these behaviours may progress, sometimes rapidly, towards delinquency and incarceration.

ODD has such a negative impact on classroom life and the working conditions of teachers and students that it needs urgent early intervention. The disorder does not only impact on the individual student, it impacts negatively on the other students, school staff and the learning environment. However, the area is not well-researched particularly from the viewpoint of the teachers who are in rural and

isolated school in New South Wales.

This qualitative research study examined the experiences of four teachers in two isolated rural schools in NSW who are currently teaching students with ODD. It examines the degree to which behaviours, of students with ODD impact on their own learning and socialisation skills and how this, in turn affects the teachers' ability to teach. Participant teachers indicated experiencing higher levels of stress when teaching students with ODD in isolated communities.

4.2 Introduction

Specific challenging behaviours have become more prevalent within mainstream schools. This has been highlighted by the Vinson Report (2001), which investigated the increase of behavioural problems within the NSW public school system. Oppositional Defiant Disorder (ODD) is one such disorder (Kaiser & Hester, 1997; Barcalow, 2006). These students, without the appropriate intervention and support to help them regulate their behaviours, persist with behaviours that may then escalate, resulting in delinquency and incarceration (Barcalow, 2006; Greene, Greene, Ablon, Goring, Raezer-Blakley, Markey, Monuteaux, Henin, Edwards & Rabbitt, 2004; Forness, Walker & Kavale, 2003).

As ODD is a serious psychiatric disorder, and a precursor to the more serious Conduct Disorder (CD) (aggressive law-breaking and violent behaviours), it needs to be identified as soon as possible. The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (APA. 1994) defines ODD as “a recurrent pattern of negativistic, defiant, disobedient, and hostile behaviour towards authority figures that persists for at least 6 months” (p. 100). Furthermore “in a significant proportion of cases, ODD is a developmental antecedent to Conduct Disorder’ (APA, 1994 p. 100).

Gresham, Lane and Lambros (2000) describe students with CD, particularly those with co-morbid Attention Deficit and Hyperactive Disorder (ADHD), as being ‘Fledgling Psychopaths’ (Lynam, 1997) and suggests that by the time they have moved from ODD to CD that they are “highly resistant to interventions” (p. 84). It is these students who pose a serious threat to teachers, staff and students (Gresham et al., 2000). Conduct Disorder is an outcome that is not in the best interest of any student, teacher or school.

Early intervention is required to support students with ODD (Kaiser & Hester, 1997; Gresham et al., 2000) due to the negative impact of their behaviours on overall classroom life. Their behaviours affect staff and students alike and can erode well-established positive classroom environments (Gresham et al., 2000). Infantino and Little (2005) assert that disruptive behaviours have a direct effect on the student’s academic performance and future outcomes. This can lead to students acting out,

exerting further stress on the teacher.

There are indications that heightened stress for teachers who work with these students, is a key factor that impacts directly on the teacher's mental health (Greene, Beszterczey, Katzenstein, Park, & Goring, 2002). Teachers working in remote and rural communities in NSW have minimal access to resources, professional development and experienced support in dealing with these students. The McRae Report (1996, p. 5) calls for 'equitable distribution of available resources regardless of location or setting'. There are a number of teachers in isolated schools throughout NSW that are beginning teachers with little experience or management skills to deal with extreme behaviours.

Research shows that teacher stress levels are continually being increased (Westling, Herzog, Cooper-Duff, Prohn, & Ray, 2006), partially by an ever increasing unrealistic workload and expanding curriculum (Morin, 2001). These stresses are exacerbated in rural and remote communities by additional factors. These factors include isolation and inexperience, as there is a higher percentage of beginning teachers who lack relevant skills in dealing with students with additional needs such as those with ODD.

When all these factors are combined, it is a potent mix and can have possible ramifications for the retention of beginning teachers. Teachers have a duty of care

for all students but they also have a right to be safe in their workplace.

There is little research addressing these issues from the perspective of teachers in isolated schools in NSW. This study aims to fill the gap in the literature by investigating the explicit support needs of these teachers. Therefore, the purpose of the study was to investigate the needs of teachers in remote and rural schools linked to the difficulties arising from managing students with Oppositional Defiant Disorder (ODD). This research highlights the many issues associated with working in isolated communities. It describes the current support provided to teachers in isolated schools in NSW and identifies some of the issues concerned with the mental health of these teachers.

This research examined the experiences of four primary school teachers in two isolated Department of Education and Training (DET) primary schools in NSW. Of these participant teachers, two were new graduates, one was a temporary teacher with three years experience and the fourth had 20 years experience in the isolated school. The participants were identified by the school principals, as having students with ODD within their mainstream classes. This research met ethical standards of the DET and the University of Wollongong Human Research Ethics committees.

4.3 Method

This research was part of a larger qualitative study of isolated schools in NSW. The methodology used was multiple case studies (Creswell & Plano Clark, 2007). The participant schools for this study were initially identified with the assistance of a District Guidance Officer servicing one of the most isolated regions in NSW Department of Education and Training (DET). Both participant schools were classified as isolated as they were located between one and two hours drive from the nearest regional centre, both serviced a population of 2800-4000 and had enrolments of 217-226 students.

The investigation was conducted to identify whether teachers in isolated schools need further support, particularly those teaching students with ODD. It used data obtained in four semi-structured interviews and daily reflective journals and memos to identify the support needs of teachers with students with ODD in isolated schools in New South Wales. The multiple case studies allowed the researcher to discover the current support supplied to the participant teacher, and what they identified as their support needs.

Semi-structured interviews and reflective journals identifying the impact of the students with ODD were used as the main data collection instruments. Further strengthening the validity of this research is the triangulation of data using

interviews, follow-up questions and the daily reflective journals, completed by the teacher participants during the study. The triangulation of data was further strengthened by the use of follow-up questions during the study.

The reflective journals were the primary source of documentary evidence and are used to 'support the strength of interpretations and conclusions in qualitative research' (Mertens, 2005, p. 426). These journals were examined for themes that strengthen the interview data analysed and provide evidence for triangulation.

Once the deeper coding had been completed, the data was interpreted. Mertens (2005, p. 422) describes the resultant analysis as being "some type of higher-order synthesis in the form of a descriptive picture, patterns or themes, or emerging or substantive theory". The data were interwoven into thick descriptions to contextualise the interpreted data and answer the research questions.

In order to maintain the anonymity, the participant schools in this study were identified by code (C & G), as have the participant teachers (A, B, E, & R). The following table is an overview of the participant's level of experience, class and school.

Table 4.1: Participant Overview

| School | Teacher | Student identification | Level of experience | Class | Number of Students |
|--------|-----------|------------------------|---------------------|-------------------|--------------------|
| C | Teacher A | A | 0 years | IM | 17 |
| C | Teacher B | B | 20 years | Stage 3 | 20 |
| C | Teacher E | E | 0 years | Multi-categorical | 5 |
| G | Teacher R | R | 3 years | Stage 3 | 22 |

4.4 Key themes

The major theme that emerged throughout the data analysis process was:

The influence of disruptive behaviours, particularly ODD on the teachers' mental health and well-being.

4.4.1 Finding 1: Teachers in isolated schools of students with ODD had limited access to in-school and out- of school support.

Whilst all schools and their senior staff were reported as being very supportive, it was not sufficient to make them feel they could adequately manage the students with ODD on their own. They indicated that new graduate teachers, particularly, need additional specialist support when dealing with students with ODD.

The four teachers indicated they had limited access to support personnel available to similar teachers in city or larger rural schools. Only one of the four participant teachers had contact with an Itinerant Support Teacher Behaviour (ISTB), Teacher R reported having sporadic support from the Itinerant Support Behavioural specialist at the time of interview (term 1, week 9). These ISTBs provide vital specialist assistance in assessing students and developing detailed individual behavioural plans (IBP).

The participant teachers in this study were supported from within the school by mentors, supervisors and some support staff. Teacher B, by far the most experienced of the participant teachers, has had some experience dealing with the stress created by students with ODD in isolated schools. Of the day-to-day stresses she comments *'some days it is harder than others. I think we have very supportive staff here so that makes a big difference'*.

There was a DET beginning teacher support program in the Region, but participation in this one-day workshop was not compulsory and it did not cover behavioural difficulties. This was the only form of induction available for teachers. Furthermore, teachers in isolated schools had to travel considerable distances to attend these professional development courses at centralised locations. This took them away from the class, which exacerbated the

difficulties of teaching students with ODD. An appropriate model of teacher professional learning for teachers of students such as those in the study must consider the effects of disruption to routine.

The two new graduate teachers both had the in-class support of a teacher's aide, which they found invaluable in the day-to-day running of the class. However, their inexperience in dealing with paraprofessionals in the classroom environment left them feeling, at times, intimidated. One teacher reported her directions to the student being occasionally undermined by the aide, which led to power struggles with the student.

4.4.2 Finding 2: Participant teachers in isolated communities experienced high levels of stress when teaching students with ODD

All participants expressed the feeling of frustration, due to interruptions by erratic behaviours reduced teaching and learning time for both the teacher and other students. This led to increasing stress levels for the teachers. Furthermore, the tiring nature of dealing with oppositional students, who are often compulsive attention seekers or continually in power struggles with adults, compounded all four teachers' state of well-being. Teacher A commented that:

'It is tiring. At the end of each day you kind of sit down and go wow. I think teaching

in general can be tiring, but when you are constantly in a power struggle with a student just to do something simple such as writing their spelling list a lot of other students were to sit there and have to write it when you are constantly trying to explain why they need to do it and it is tiring. You end some days just needing a break.'

Teacher E, a beginning teacher in her first year comments

'it is obviously more difficult for me to have him there but that is teaching, having kids with different need, ... he does have some days when he is very good. I sometimes take it personally and think it is my fault that it has happened [an incident].'

Teacher B claimed the stress of continually dealing with students with ODD resulted in her going on stress leave the previous year. She reported that there was an on going expectation of availability by other staff members for her to attend to all issues involving that student. Therefore, the teacher's off-class time was consumed by requests from others to deal with the student with ODD and this added to the stressors.

All schools had a school behaviour management program that was supported by senior staff members, however, it appeared to be an ineffective deterrent to the students with ODD. The ineffectiveness of the standard behaviour management practices is evidenced by fact that all of the identified students had been suspended by the middle of Term 1. This was reported in the teacher daily reflective journals. One student was suspended for 30 of the first 39 days of school. Although none of the aggressive behaviours were directed at teachers, this study found that the

teachers were concerned about the escalation in student behaviour and were conscious of the additional anxiety that teaching these students caused them.

4.4.3 Finding 3: The beginning teachers felt underprepared for teaching students with ODD.

The third finding of this part of the study is the under preparedness of beginning teachers to teach students with ODD in isolated schools. This became evident during the initial interview when two teachers revealed that they were new graduates and a third revealed that he was an inexperienced temporary teacher. The two new graduate teachers felt that they were unprepared for dealing with students with ODD within the mainstream classroom despite their university education. Teacher A remarked when discussing whether the preparation she received at university was sufficient, *'Being straight from uni you never really learnt about that [effective strategies for students with ODD] so I think just to be able to have people who have experienced this and maybe just having a chat with those people just to see what strategies they have in place.'* When asked about whether she felt a need for additional training Teacher A replied *'Yes, definitely'*.

Teacher E had come to the school with experience teaching students with special needs, but has had no experience with students with ODD *'I have never had*

anybody with ODD before apart from the defiance which comes with Down Syndrome'. When asked if she considered she required further training, Teacher E commented 'Yes. Because..... I have never worked with kids with mental health behaviour..... So it is on myself to also find out how I can implement something that will work for him'.

All three inexperienced teachers felt that further training and professional development, particularly in the area of classroom management and social skills training, was an important tool in coping with these demands. One complicating factor that they highlighted was that this was not always practical in an isolated school. Alternative means of providing support, such as a website were seen as a positive initiative by the teachers. This was demonstrated when one of the teachers went to a two-day course and came back and found over half the class had been suspended due to behavioural incidents.

4.5 Discussion

The results of the study revealed a number of areas in which teachers in isolated schools might be better supported to manage and assist students with ODD. Recommendations for supporting teachers and delivering resources to isolated teachers and teaching communities can be made.

4.5.1 Support for teachers in isolated schools

Individual Education Plans and Individual Behaviour Plans were identified by the participant teachers as being an important strategy in planning for, and assisting, the students with ODD to achieve their learning goals. However, with one exception, teachers did not mention having any in place. Specialist assistance is required when assessing and constructing well-designed individualised plans for each student. This assistance needs to be provided to allow the teachers to access flexibly resources as they require them, without having to leave the school environment. In isolated schools, and in large country regions these personnel cover a huge geographic area and as such, are not often in the office or available via phone. This exacerbates the feeling of isolation for teachers in isolated schools as they must 'wait their turn' for access to specialist services.

The data demonstrated a distinct need for social skills training for the students with ODD. However, staff indicated they did not have the skills and knowledge and would require a specialist program and specialist support to implement the program. Areas of concern included developing positive reciprocal peer interaction skills and individual anger management skills.

Supported access to, and on going professional development in behaviour

management of students with ODD was highlighted by the beginning teachers, as an immediate support need. All teachers expressed the need for access to specific resources such as social skills programs and behaviour modification programs to assist in dealing with students with ODD. Accessibility to DET provided support was an issue mentioned by all teachers.

4.5.2 Recommendations for Delivering Resources to Isolated Teachers

The researchers identified five key recommendations that have emerged from this study:

1. Teachers have access to specialist behavioural learning support officers (in-school aides) and ISTBs (external).
2. The formalising of induction and mentoring procedures for beginning teachers in isolated schools in a manner that they can access without disrupting the students.
3. That the DET provide a support network for beginning teachers in isolated schools for students with ODD.
4. That the DET streamline the provision of specialist services to teachers in isolated schools, so that they do not have to wait excessive amounts of time.
5. That a website would be one effective means of delivering these services to isolated schools.

All participant teachers identified minimal experienced support, apart from other school staff. The provision of a fulltime Learning Support Officer (aide) with specialist behaviour training was indicated as an optimal support need. The teachers perceived the benefits as twofold: supporting all students in the class as well as support for the students with ODD. However, economically and practically, this may be viewed as unrealistic provision in the current political climate. An aide would allow teachers to focus on teaching with minimal interruption and assist in decreasing the sense of isolation both in the classroom and in a remote environment. Further, it would decrease teachers stress levels and add a protection factor in the form of adult support.

Geographical considerations impact on frequent face-to-face contact with DET support personnel, including ISTBs, and, therefore, restrict assistance in developing Individual Behaviours Support Plans and conducting Functional Behaviour Analysis (FBAs). Access to these support personnel between visits, could be increased by the availability of pre-arranged video conferencing.

Specific (school-based or DET) induction procedures were not indicated by participants prior to or early on at their new school. The researcher recommends a formalisation of these procedures. Individual schools and regional networked schools should provide induction programs which include the identification of

designated mentors who have experience with ODD students and other challenging behaviours, as well as, formal training on appropriate classroom management techniques. A toolbox of specific strategies would enhance new teachers' classroom management skills beyond mainstream methods and support their well-being.

All teachers in this study indicated varying degrees of stress, and feelings of frustration and isolation. These feelings can be much more prevalent with beginning teachers (DeWert, Babinski, & Jones, 2003) and may increase the possibility of an early exit from the profession. Professional, practical, emotional and social support in the beginning years has been shown to improve 'problem-solving skills' and reduce teacher stress (DeWert et al., 2003). This study found a clear need to further support teachers of students with ODD in isolated schools. However, how best to deliver these services to such a wide geographical area is an issue. On-line support communities had the ability to overcome barriers of time and distance, offering flexible delivery of collaborative consultation (DeWert et al., 2003).

The researchers recommend the implementation of a designated website, hosted on the NSW DET portal, to support teachers in isolated schools of students with ODD. This website should contain practical classroom strategies, resources to help teachers with students' social skill development and links that assist them in

improving the academic performance of students with ODD and dealing with behavioural difficulties. Further, the researchers recommend that there be a 'chat-room' or online interaction component to provide "emotional support and encouragement while diminishing feelings of isolation" (DeWert et al., 2003 p. 313) with appointed mentors to be on this website as well. The website should also include specialist advice, with psychologist and behavioural specialists available for consultation. A weekly timetabled forum would be ideal; this would assist in bringing the isolated teacher in contact with specialist support in an effective use of their time.

The researchers suggest that learning support officers (aides) also be granted access to this website. This would assist their knowledge and understanding in assisting teachers to maintain positive learning environments. It could also provide professional learning opportunities specially tailored for learning support officers including an awareness of current behavioural policies and practices. To keep teachers in isolated classrooms in NSW the mandatory induction program could also be delivered in an on-line format that would allow teachers in isolated schools to complete the program at an appropriate time, without needing to leave their schools.

4.6 Conclusion

Working in isolated and remote schools with minimal support can be challenging particularly for new graduate teachers. This challenge, on a practical and personal basis, can be exacerbated by students with ODD who require additional support. Providing equitable support through physical and people-based resources, professional development and the suggested website to support teachers in isolated schools of students with ODD could assist in supporting and sharing these challenges in a professional and effective manner. This web based resource can be used to provide a Community of Practice for the new graduate teachers to assist in reducing the feelings of stress and isolation. Further research needs to be conducted into the effectiveness of a web-based support structure for teachers in isolated schools, as a means to provide equitable distribution of specialist resources and targeted professional development.

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Article Two: Bringing It To The Teachers:

Building a professional network among teachers in
isolated schools

5 ARTICLE TWO:

This chapter includes a published article: McLean, F.M., Dixon, R.M. and Verenikina, I. (2014) Bringing It To The Teachers: Building a professional network among teachers in isolated schools. *Australian and International Journal of Rural Education* 24 (2), pp. 15-22.

This article covers Phase Two of the research and was presented at the Australian Rural Education conference in 2012. In this article I describe and justify the development of the professional network that is the BITTT CoP. My role is lead author of this paper, with my PhD supervisors as co-authors. I carried out this research with considerable contribution from my supervisors through collaborative discussions and critical revisions of the research and writing process. Dr Roselyn Dixon is second author on this paper as she is the primary PhD supervisor.

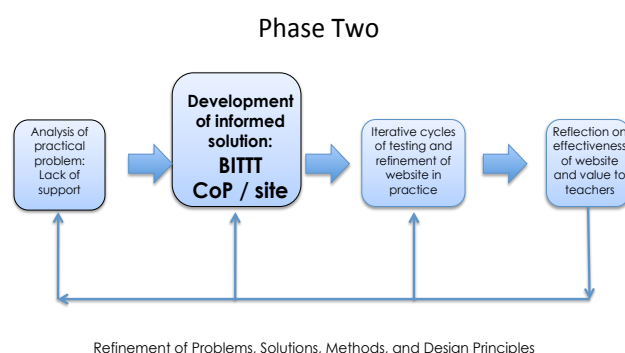


Figure 5.1: BITTT phase covered in this article

5.1 Abstract

Teachers in isolated schools are often under-resourced and overwhelmed with additional pressures. Teaching in an isolated community can sometimes challenge teachers' skills and knowledge, particularly when additional pressures such as behavioural issues associated with students with Oppositional Defiant Disorder (ODD) like behaviours are present. Teachers in isolated schools catering for students exhibiting elements of ODD need additional support and resources, but distance and isolation are barriers to the provision and receipt of these services. Professional support networks are often relied on by these teachers, but these support communities can be hard to build because of the physical distances in rural NSW. Thus, teachers in isolated schools are often faced with dealing with stress and student behaviours on their own, with very little support, which might leave them feeling disconnected. One method of connecting isolated teachers is through an online Community of Practice (CoP).

Websites which can enable the development of a CoP have been proposed as a way of solving this problem. This study was developed to examine the building of an online support structure named 'Bringing It To The Teachers' to provide for an emergent online professional network for teachers in isolated rural NSW

schools. The study involved ten teachers from five isolated schools catering for students who had been identified as displaying oppositional and defiant behaviours. This paper presents the preliminary findings of the study, investigating the elements required for successful development of an online CoP for teachers in isolated rural communities.

5.2 Introduction

Teachers in isolated schools in NSW, also known as Country Area Program (CAP) schools, report being unprepared and burdened with student behavioural issues, which are often perceived as more challenging than those experienced in urban schools (McLean & Dixon, 2010). These teachers' effectiveness is challenged even further if those issues are associated with students who display behaviours characteristic of Oppositional Defiant Disorder (ODD) (McLean & Dixon, 2010). ODD is a behavioural disorder diagnosed using prerequisites in the Diagnostic and Statistical Manual of Mental Disorder (DSM-IV) (American Psychiatric Association, 1994), and is generally diagnosed by psychologists or psychiatrists in urban areas. However, because of factors related to isolation, CAP school counsellors are able to give students a 'mental health' diagnosis, which attracts the same funding as an ODD diagnosis would in urban areas. Moreover, whilst in some schools there are no students with a formal diagnosis, the behavioural problems associated with ODD like behaviours still exist.

Teachers in CAP schools need additional support and resources, but distance and isolation are barriers to the provision and receipt of these services, placing these teachers at a significant disadvantage (Lyons, Cooksey, Panizzon, Parnell & Pegg, 2006). Like their urban counterparts, these teachers rely on professional support

networks. However, due to the physical distances occurring in rural NSW, these support communities are difficult to build and maintain (McLean & Dixon, 2010). Thus, teachers in isolated schools are often forced to deal with student behaviours, and the resultant stress, on their own with very little support.

An innovative online network called Bringing It To The Teachers (BITTT) was instituted by the researcher to address the isolation and lack of professional support of teachers in isolated rural NSW schools. The study examined the building of such a network involving ten teachers from five isolated schools who were teaching students identified as displaying oppositional and defiant behaviours. The conceptual framework of Community of Practice (Wenger, 1998) was adopted to inform the development of the online professional network.

A Community of Practice (CoP) is a group of like-minded people sharing common concerns, problems, passion or experiences (Wenger, McDermott & Snyder, 2002). A feature of a CoP is that members have the opportunity to learn socially from each other, through a mutual discourse, which enhances social interactions. These social interactions can be important as they, in turn, enhance social relationships and mitigate the isolation felt by teachers in isolated schools. Further a CoP can play an important role in the building of professional knowledge by community members engaging in “reciprocal interactions”, which in turn promotes “professional connectedness” (Reading, 2010, pp. 3-4). Teachers in isolated communities who

are unable to meet face to face may benefit from the sense of professional connectedness offered by a dedicated virtual CoP (Reading, 2010). Further, participants in the CoP are able to have professional discussions without judgment and therefore gain additional emotional support from the community. However, CoPs "are not born in their final state" (Wenger et al., 2002, p. 68), they have to undergo several stages of transformation to become mature. This paper presents the results of the early stages of the development of the BITTT network and identifies the elements required for its successful start.

5.3 Research design

The research project utilised a design-based approach as an overarching research framework that guided the researcher in analysing the problem and developing solutions to the issues identified by teachers in isolated schools with having access to professional support (Barab & Squire, 2004; Cobb, Confrey, diSessa, Lehrer & Schauble, 2003). Design-based research was chosen as appropriate to the main purpose of the study – to design an online network, which could supports the teachers in CAP schools who work with children displaying oppositional and defiant behaviours.

The four phase research design used for the study included identifying and analysing the problem, developing an informed practical solution, the development of iterative cycles of improvement and reflection. Based on a process described by Creswell and Plano Clark (2007) the local impact of this solution was evaluated through a series of iterative cycles of testing and refinement before the broader impact of the intervention was evaluated. The authors' previous research (McLean & Dixon, 2010) provided initial understanding of the needs of teachers in isolated schools catering for the needs of students with oppositional behaviours. Phase One of the research involved consultation with a behaviour expert, a focus group on best practice strategies, and interviews with the participant teachers, which allowed for refining the understanding of the needs of teachers in isolated schools and for developing initial design principles for the development of the BITTT site. Phase two was the development and testing of the BITTT site. Phase Three involved the cycles of evaluation and improvement that occurred during the research period. Phase Four will involve a reflection on, and the development of the revised design principles for the BITTT online Community of Practice, with Phases One to Three have been completed and Phase Four is currently in progress.

5.4 Theoretical framework

The theoretical framework of this study is based on the concept of Vygotskian social constructivist theory and Neo-Vygotskian activity theory. Social constructivist theory suggests that people construct knowledge based on prior experiences and social negotiation (Daniels, 2008). Knowledge and learning is gained through social interactions and these social interactions within a 'community' are used for the "continuity and development of knowledge" (Daniels, Cole & Wertsch, 2007, p. 82). In this study the 'community' refers to the Community of Practice, as depicted in figure 1. It was this Community of Practice (CoP) that the BITTT site was seeking to develop to support teachers and their on going professional development in isolated schools. Activity theory examines the relationship between the subjects, objects, tools and community (Engeström, 1998). Further Activity Theory explains the correlation between these aspects and normative societal rules (Engeström, 1998). In this study the interactions examined will be between the teachers (subjects), the website (tool), the professional development (object), a code of conduct (rules), the experts and participant teachers (division of labour) and the Community of Practice (community). The figure below (Figure 1) gives a pictorial representation of the interactions as seen in the BITTT project.

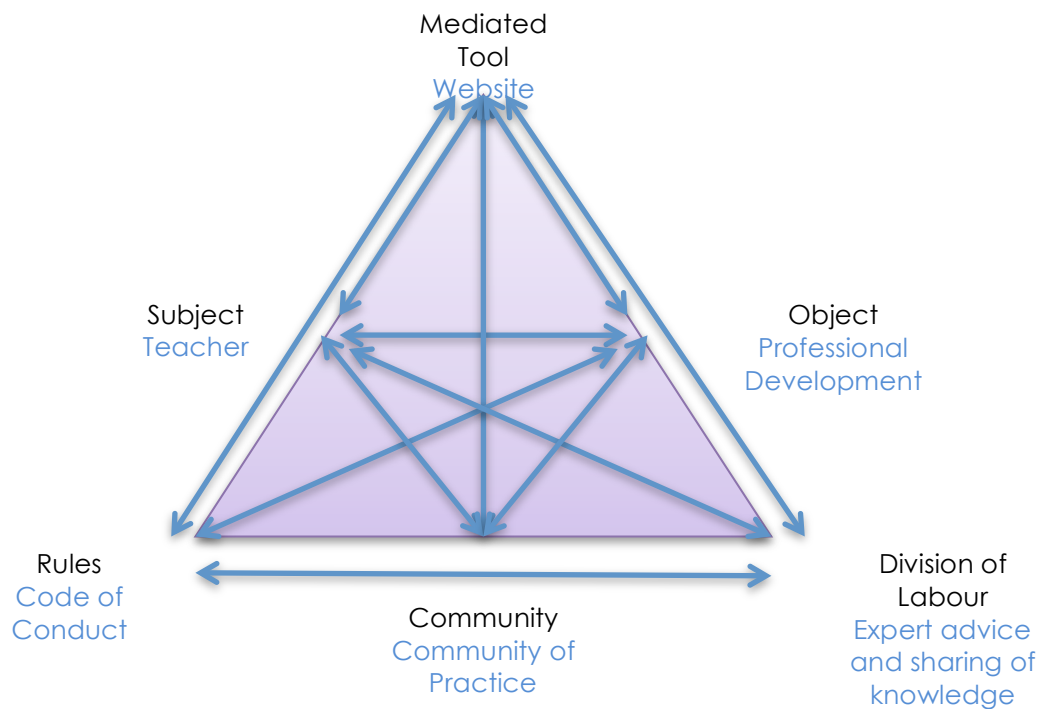


Figure 5.2: Activity Theory as it applies to BITTT (adapted from Engeström, 1998).

Each element interacts and is dependent on tensions from the other elements to maintain its structure: for example, the Community of Practice will only develop if there are teachers participating in the website who are interested in improving knowledge through gaining advice and sharing knowledge.

5.5 Participants

5.5.1 Schools

This study involves five isolated CAP schools in NSW. The NSW Country Areas Program (CAP) is an equity program run by the NSW Department of Education and Communities. Its target outcomes include reducing the impact of geographical isolation on NSW schools. To qualify for the Country Areas Program schools must be more than 90 kms from a centre with a population over 10,000 and meet an isolation index criteria (NSW DET, 2009). The schools and participants are outlined in a Table 1, the size of the schools varied from 146 students to 316 students, with all schools categorized as isolated. The distances between the schools in this study varied, with the greatest distance between schools being 475 kms: for example, if all teachers had come together at the nearest regional centre, where professional development generally occurs, the return distance travelled by the teacher participants would be between 322 and 740 kms. Isolation impacts in other ways: additional costs for travel and replacement staff, additional time that the teachers are out of the school, interruption of learning programs for teachers and a disruption to the routine for classes.

5.5.2 Teachers

The participant schools were identified by the regional District Guidance Officer, as schools catering for students with oppositional and defiant behaviours. A presentation was then made at each of the schools to recruit participants. The ten teacher participants had an average of nearly eight years experience with four inexperienced teachers (under three years) and two very experienced teachers (over 14 years). There were three male teachers and seven females. Table 5.1 outlines the participant and school profiles.

Table 5.1: Participant and school profile

| School | Size * | Participant | Gender | Experience |
|--------|--------|-------------|--------|------------|
| A | 211 | 1 | F | 14 yrs |
| B | 146 | 2 | F | 1.5 yrs |
| C | 316 | 3 | F | 3 yrs |
| | | 4 | F | 5 yrs |
| | | 5 | M | 4.5 yrs |
| | | 6 | F | 30 yrs |
| D | 158 | 7 | M | 2.5 yrs |
| | | 8 | F | 1.5 yrs |
| | | 9 | M | 8 yrs |
| E | 210 | 10 | F | 7 yrs |

* Information from My School website (ACARA)

5.6 Description of the online BITTT model

The Bringing It To The Teachers (BITTT) professional network was developed in 'Edmodo', an education specific social networking site for use by teachers and students. This site contains folders with resources, strategies and information about ODD, IBPs, as well as a 'Facebook' style chat feed that allows participants to post comments and resources, store a library of resources, make comment on other participants' questions and commentary and ask questions of the community of participants. The BITTT site has folders of resources for public access, which include: Individual Behaviour Plans (IBPs), information about ODD, links to outside web resources and specific teaching strategies.

5.7 Methods of data collection

The methods of data collection in this study included a focus group and a series of semi-structured telephone and face-to-face interviews, combined with questionnaires, which focused on specific site usage questions. These methods of data collection were used to inform each of the phases of DBR, where phase one utilized the focus group, phase two utilized the data from the initial phone interview, phase three utilized the iterative cycle questionnaires and phase four the

final, face-to-face interviews. Semi-structured interviews and online questionnaires were designed to inform the iterative cycles of improvement and were conducted during each of the iterative cycles. The data collection commenced with initial interviews, which were conducted via phone at a mutually convenient time in mid 2011. The BITTT site was developed and launched in September of 2011, with the data collection period lasting nine months. Final interviews were conducted face-to-face in July 2012 at the participant schools. The online questionnaires were conducted throughout the nine month data collection period to inform the iterative cycles. These cycles were completed in July 2012.

5.8 Data Analysis

Data were analysed using thematic analysis, the data were put into a coding matrix developed from the “Conceptually Clustered Matrix” (Miles & Huberman, 1994, p. 128) using the themes identified by the researcher as they emerged from the findings. This matrix used groupings from design research principles developed in phase one of the research including: a) provide the teachers with specific information on oppositional and defiant behaviours as they felt underprepared in this area; b) enable consultations with experienced professionals, c) support teachers’ problem solving skills, d) meet teachers’ needs for belonging by providing space for peer communication, e) provide easy and simple access to the site for

effective use of time and resources. The matrix allowed the researcher to make connections between the data and the design of the learning environment. Further it allowed for the relationships within the data to be uncovered and cross-comparisons made (Miles & Huberman, 1994). The preliminary analysis of the iterative cycle questionnaires identified themes, which led to improvements in the BITTT site. These themes included the need for expert help, a desire for professional discussion and a request for visual resources.

5.9 Results and discussion

Preliminary analysis of the data revealed common themes and highlighted enablers and barriers of the CoP professional network developing within the BITTT site. The development of the CoP was very slow because of the small number of participants; however, the individual elements of the site proved to be effective. The elements of the BITTT site that the participants identified as being most valuable included: easy to use site, 'ask an expert' feature, effective teaching strategies and relevant resource links. These are expanded further below.

An initial principle identified in phase one of the research was the need for consultation with experienced professionals, this need was met by the very 'ask an expert' element, which required participants post a question or problem that was

then attended to by one of a panel of experts. Below is an example of a teacher's question.

“Having an issue at the moment – The child struggles with Maths and this is setting them off for the rest of the day ... tantrums, crying, hiding or moving around the room – it’s becoming a pattern everyday ... I am giving them all of the support I am capable of in class but I am just wondering if you have any suggestions?” (Teacher 4)

The behaviour expert’s reply was extensive and included strategies such as: setting up a Maths contract, designing activities that link to the student’s preferred activity, using interactive Maths games online as a class reward. Teacher 4 implemented some of these strategies and had success. The ‘ask an expert’ feature proved to be popular, with 80% of participants listing this as an essential element of the site in the final interview. The questions and replies were public for all participants to see, with participants adding tips that worked for them at times.

The need for belonging was addressed by providing space for communication in an attempt to further development the CoP. Whilst most participants (60%) commented on the importance of the discussion board, they were reticent to be the first to ask for help. The participants suggested they were willing to contribute to discussions and wanted advice, but were unwilling to ask for help. Participants were happy to ask the expert, but were unwilling to ask the general population of teacher participants. They were also willing to contribute but did not want to be

seen by colleagues as incapable. A typical comment was as follows:

I liked the discussion and am happy to participate, but I wouldn't want to initiate it ... just not comfortable with it. (Teacher 8)

Providing for an effective use of time and resources was an initial principle for the development of BITTT site and the most valuable element identified by the participants was its simplicity of use and the ease of access provided by an open site. The participants identified the BITTT site as easy to use (70%), however, as it was a research site, and it was closed to the public, and teachers felt it was “just another user name and password I have to remember, I have so many already” (Teacher 2). An open site with the same resources was suggested as a possible improvement. Due to the participants isolation standard professional development was intermittent and often caused disruption to the classroom. The site allowed participants to access informal professional development in a time and cost effective manner, which the participants were satisfied with, however they identified the need for behaviour specific resources and strategies to be included on the website.

The participants (50%) appreciated the time effective access that the site provided to strategies and resources and commented on the collection of expert recommended resources and strategies being a valuable asset to their teaching practice. This also applied to both initial principles that teachers feel

underprepared and needed more specific information about working with children, and that they need clear problem solving solutions and strategies, by providing them with a simple avenue to access resources and strategies.

Most participants (90%) cited competing priorities as a barrier to seeking and developing a professional network. One of the most significant limitations related to the effective use of the site was the large workload placed upon teachers in isolated schools, with many spending up to four hours outside of school hours on preparation, meetings, planning, programming and mandated activities. This restricted the amount of time they had available to them for browsing the site, or learning about new skills and strategies. One participant felt if it was mandated by the boss he would do it but otherwise it was “shoved to the bottom of the pile” (Teacher 5). A typical comment was as follows:

So the workload that is getting pushed on you, unless it is mandated, like I get emails and I looked at them and thought ‘oh yeah yeah’ it’s always in my inbox, like you don’t even have a folder you are still in my inbox and I’ll deal with that I’ll come back to it. You never ever come back to it. So how you make that something that teachers go ‘this is a priority that I need to deal with’ (Teacher 5).

Other barriers to accessing the BITTT site included lack of time, inappropriate Internet access, and the need to use a password, which made the site less

approachable. Some participants (40%) cited ease of access as important and preferred not to have to enter passwords; however, this was not appropriate in a research website, as this needed to be a closed website for the data collection period. Whilst the password situation could be addressed in a post study BITTT site, the issue of internet access and lack of time are complex issues in the hands of the individual, school and a wider community such as relevant government organisations.

It was found that individual working styles impacted on the BITTT site usage, with some teachers (40%) only referring to the site when they faced a difficult or unfamiliar situation. When an incident occurred, they consulted the site in search of answers, using a reactive style of classroom management. Conversely some other participants had a 'just browsing' approach (30%), which would suggest a more proactive method of classroom management. However, both the styles need to be catered for.

Further research might need to consider moving the site to an open forum, broadening the content and the context to cater for all teachers in isolated schools and to cover a wider range of special needs. The BITTT site could be reconfigured to make the chat component less dominant and, therefore, less demanding and intimidating to the teachers. Further research is necessary to understand what could assist teachers' engagement in chats with peers, thus allowing for further

development of the CoP, which currently is still in its early stage. The change of format to a more resource and effective strategy based site would cater for a broader audience than the current format, as the chat was seen as a secondary interest to the teacher participants, not the reason they wanted to visit. Live chat with an expert would also be an integral component of the future BITTT site. The future of BITTT would be dependent on funding, which would impact the accessibility.

5.10 Conclusion

The preliminary findings indicate that there is a need for this type of professional network in rural NSW. The principles identified in phase one were refined and strengthened with the data collected and expanded to include additional features.

The specific features of the site identified by the teachers as being most useful were the 'ask an expert', professional network and the availability of specific and relevant resources. These features were valued by participants and could be enhanced with a further roll out of the site to encompass the wider rural teaching community.

The specific features of the site that needed to be adjusted were an expansion of the 'ask an expert' to include a 'live chat' component, where teachers can ask experts questions and get immediate responses, allowing for follow up questions

and clarification. The layout of the site also requires some adjustment with a greater focus on resources and perhaps lesser focus on the chat to avoid its supremacy. This would allow teachers searching for specific resources and strategies to access information more readily. Yet the ways that the 'chat with peers' can be made more appealing and engaging for teachers require further investigation.

The future directions of the development of the BITTT would see the site move to a more accessible forum, broadening the context from teachers of students with ODD to cater for all teachers in isolated schools. Further information on a wider range of disabilities, including links to organisations and departments would attract a greater number of participants, allowing for the CoP to further develop. The BITTT site might need to be reconfigured to make the chat component less dominant, allowing a more resource and effective strategy based site that would cater for a broader audience than the current format. Live chat with an expert would also be an integral component of the future BITTT site, which would be dependent on funding.

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Article Three: Bringing It To The Teachers: Refining an online learning environment for teachers in isolated schools

6 ARTICLE THREE:

This chapter includes an article under review by *The International Journal of Adult, Community and Professional Learning*:

McLean, F.M., Verenikina, I. and Dixon, R.M. Bringing It To The Teachers: Refining an online learning environment for teachers in isolated settings.

This article focuses on the iterative cycles of testing and improvement during the development of the Bringing It To The Teachers (BITTT) website. These findings represent Phase Three of the research and were presented at The Learner conference in New York in 2014. Due to the word limit of the Journal, this article will be extended in the Chapter Seven. The referencing in this article is in Chicago style to meet with journal requirements. My role is lead author of this paper, with my PhD supervisors as co-authors. I carried out this research with considerable contribution from my supervisors through collaborative discussions and critical revisions of the research and writing process. Dr Irina Verenikina is second author on this paper as it has a design-based research focus which encompasses her expertise.

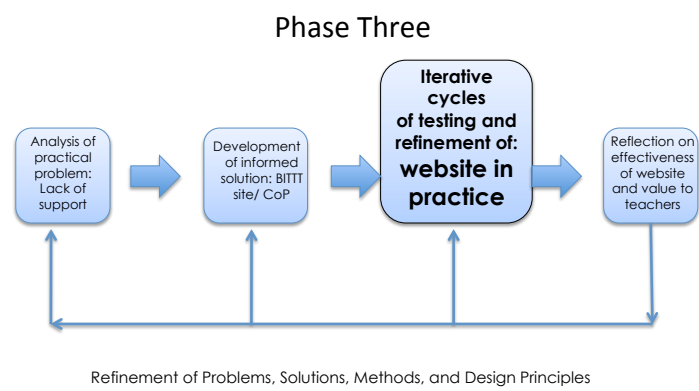


Figure 6.1 BITTT phase covered in this article

6.1 Abstract

Teachers in isolated schools are often unable to access the same opportunities for professional development as teachers in metropolitan schools. Attendance at face-to-face courses takes these teachers out of the classroom for additional days due to the extended travel required. Information and expert advice about classroom behaviour management is available on the Internet, however, the time required for finding and accessing these resources is in short supply. The 'Bringing It To The Teachers' online learning environment was designed to provide specific information and professional advice, including professional development, to teachers in isolated schools and to provide them with access to a supportive Community of Practice (CoP). Design-Based Research was used to build the 'Bringing It To The Teachers' network for teachers of students with Oppositional Defiant Disorder and associated behaviours at five isolated schools in western New South Wales, Australia. The focus of this article is the evolution of the BITTT site through the iterative cycles of improvement which provides foundational design principles for online networks built for other contexts.

Keywords: Rural education, teacher support, teacher professional learning.

6.2 Introduction

Teachers in isolated schools in New South Wales, Australia have voiced a need for a greater level of support. Research has shown that it is essential for teachers to maintain a program of professional development that allows them to improve their practice in order to provide quality instruction for their students. Additional pressures including social isolation, geographic isolation and limited access to professional development further hamper teachers in isolated schools in their ability to meet these needs.

Schools in remote and isolated western NSW are often considered ‘hard to staff’, with studies showing that teacher recruitment and retention is a significant issue for school administration in these areas (Panizzon & Pegg, 2007; McKenzie, Rowley, Weldon & Murphy, 2011). This trend is repeated across Australia with the majority of secondary principals (66%) and a significant proportion of primary principals (39%) reporting moderate to major difficulty filling teaching vacancies (McKenzie et al., 2011). Beginning teachers often fill these positions, and make decisions on staying in the profession based on their experiences in the first five years. Factors that influence these decisions include the level of support they receive, and their ability to cope with the workload (Pranther-Jones, 2011). Social isolation is also seen as a significant contributor to teacher dissatisfaction in isolated locations

(Manuel, 2003). In order to support these teachers, a method of developing a sense of belonging and community for teachers in isolated schools needs to be identified. One method of meeting this need is a *Community of Practice* (CoP), a group of people sharing some common concerns, problems or experiences (Wenger, McDermott, & Snyder, 2002). This study examines the development of one such CoP, as part of a professional network for teachers in isolated schools in New South Wales (NSW), Australia.

The purpose of this paper is to examine the process of refinement undertaken in developing the BITTT network. This network provides access to professional learning, expert advice and a community that provides collegial support in an innovative format, specifically tailored to meet the learning environment. The BITTT project identified innovative ways in which these teachers could be supported and designed an authentic and relevant solution, utilising specific contextual feedback to refine and develop design principles for the online learning environment and producing a theoretically supported model. The multi-modal BITTT model could assist in developing a significant cutting edge resource for all teachers in rural, remote and isolated schools and go some way to improving the retention rate of teachers in the dynamic landscape of rural education.

6.3 Literature review

The distances between schools in isolated NSW are significant, making face-to-face contact with colleagues impractical. Geographically these teachers, many of whom are beginning teachers, need to rely on a small pool of colleagues or contacts from previous and present work environments for support. Professional learning is scarce and is often undertaken in a regional centre that can be hundreds of kilometres away. These conditions make attending professional learning sessions problematic for a number of reasons, including additional travel time and extra time away from class (McLean & Dixon, 2010). Further research identified that teachers in rural schools feel a sense of professional isolation and perceived particular disadvantage in the areas of professional development and learning (Tytler, Symington, Darby, Malcolm, & Kirkwood, 2011). Significant needs, including professional development focused on students with behaviour disorders and collegial support from teachers in similar positions, were identified by previous research (McLean & Dixon, 2010).

The majority of research, as highlighted by Opfer and Pedder (2011), noted that teacher professional development focuses on “specific activities, processes, or programs” without taking into account the learning environments in which teachers live and work (Opfer & Pedder, 2011, p. 377). Furthermore, teacher professional

learning has been demonstrated to be most effective when contextually situated (Opfer & Pedder, 2011; Borko & Putnam, 1997; Lave & Wenger, 1991). Time, effort and resources should only be expended on quality programs that assist in building teachers' capacity (Dede, Ketelhut, Whitehouse, Breit, & McCloskey, 2009). Also, the professional learning community in which a teacher works and interacts can influence their professional growth (Borko, 2004). The development of a supportive community can positively influence a teacher's professional growth with improved reflective practices. Such communities, where teachers can interact both professionally and socially, are increasingly being formed online for teachers in geographically isolated locations.

Online communities have been shown to promote "ongoing teacher interaction" (Hur & Brush, 2009, p. 279). Further, "steps should be taken to ensure that teachers have the knowledge, support, connectivity and resources necessary to effectively access these sources of information" (Nandelson, Seifert, Hettinger, & Coats, 2013, p. 92). With the growing wealth of knowledge and information available online, and ever increasing time constraints placed on teachers, it is important to make access to information and resources easily accessible and time effective. However, the effective development of online communities requires specific elements and must overcome associated barriers.

Some identified limitations of CoP are that they are slow communities in a fast paced world, that are unable to keep pace with change (Roberts, 2006), however I suggest that rural settings like those in NSW run on a much slower timeframe than cosmopolitan hubs. Another barrier to participation is the objectivity of the information, as identified by Ardichvili, Page and Wentling (2003), who reported that knowledge based communities are more trusted than institution based ones. The establishment of trust between members and removal of barriers were identified as importance factors.

One model purported to provide teacher professional development in an online environment is the CoP (Wenger, 1998), which was originally developed for the business community and was used to “facilitate knowledge transfer” (Roberts, 2006, p.623) but is being increasingly used in educational settings. A CoP is defined as “a group of people who share an interest in a process of collective learning that creates bonds between them” (Wenger, 2011, p.1). The theoretically grounded constructs of CoP allow for the examination of “how adults learn through everyday social practices” and can support socially constructed knowledge (Gray, 2004, pp.22-23). The social nature of CoP made it the ideal theoretical framework for this study. The key element of a CoP which provides teacher professional development, is the encouragement of teacher participant interactions, whilst providing continuous support (Barab, Kling, & Gray, 2004).

Support, while essential to developing reflective practice, can be provided in a number of ways. The potential of an online CoP as a mentoring tool for beginning teachers, particularly in supporting teachers in “reflecting on their practice, in a collaborative and supportive learning environment” is reported by Kirshner and Lai (2007, p. 129). They further acknowledge the complexities of designing and implementing such a CoP. Another study into the use of online resources to provide emotional support and improve teaching practice in an American context with beginning teachers (Moore & Chae, 2007) found that although beginning teachers rarely shared their practice online with peers, they were looking for support. A number of other studies have recognised the importance of communication and social networking for isolated people (Hlapanis & Dimitracopoulou, 2007; Kelly, Gale, Wheeler & Tucker, 2007). Therefore the CoP shows promise in the mitigation of geographical and social isolation, mentoring and support via online methods would be advantageous in supporting teachers in isolated schools.

There is currently a limited amount of research on teachers in isolated schools and the additional support that they require, particularly when looking at teachers of students with behavioural disorders. Previous research (McLean & Dixon, 2010) identified that the teachers in isolated schools of students with Oppositional Defiant Disorder were not receiving the support they required. These are the most challenging students to cater for, requiring a range of specific strategies and an understanding that many teachers are unprepared for (McKenzie et al., 2011). The

impact of the additional pressures can see an increase in teacher burnout. The current study focuses on teachers in isolated New South Wales, Australia and their need for a real-life solution to this lack of support the development of this support and the barriers to participation in a Community of Practice online learning environment.

6.4 Approach and methodology

This study employed a Design-Based Research (DBR) approach as an overarching framework (McKenney & Reeves, 2012) that guided the author in analysing the problem faced by teachers in isolated schools not having access to professional development and informed the design principles which directed the design of the Bringing It To The Teachers (BITTT) online learning environment. The DBR approach allows the nexus between research and practice to be bridged with authentic real-world contexts utilised to allow “practitioners and researchers to work together to produce meaningful change” (Design Based Research Collective, 2003, p.6). Moreover design experiments or design-based research are seen as particularly useful for investigating teacher professional development and professional learning communities in rural areas (Borko, 2004).

6.4.1 Setting

This study involved five isolated schools in NSW, Australia. These schools were more than 90 kms from a centre with a population over 10,000 and met an isolation index criteria (NSW DET, 2009). The schools and participants are outlined in a Table 1. The size of the schools varied from 146 students to 316 students, with all schools categorized as remote or very remote.

6.4.1.1 Participant Teachers

Schools identified as catering for students with oppositional and defiant behaviours that met the isolation criteria were invited to participate. Ten teacher participants from those five schools chose to participate with a variety of experience with six out of ten teachers categorized as inexperienced (five years or less). Most participants reported being proficient technology users, with the exception of the most experienced teacher, Teacher 6. Table 1 outlines the participant and school profiles.

Table 6.1 Participant and school profile

| School | Size * | Teacher Participants | Gender | Experience (years) |
|--------|--------|----------------------|--------|--------------------|
| A | 211 | 1 | F | 14 |
| B | 146 | 2 | F | 1.5 |
| C | 316 | 3 | F | 3 |
| | | 4 | F | 5 |
| | | 5 | M | 4.5 |
| | | 6 | F | 30 |
| D | 158 | 7 | M | 2.5 |
| | | 8 | F | 1.5 |
| | | 9 | M | 8 |
| E | 210 | 10 | F | 7 |

* Information from My School website (ACARA)

6.4.2 Research design

In this study the authentic setting was identified as isolated schools in NSW and the real-life problem of that community of teachers was the access to professional development, support and behavioural experts. The identified issue required a practical solution. With this in mind DBR was the research methodology used to develop and refine, using experimental adjustments, a solution to a problem in a naturalistic setting (Barab & Squire, 2004). The design of the solution “evolves over time through multiple iterations of investigation, development, testing and refinement” (McKenney & Reeves, 2012, p. 15). The DBR process allows for theory and practice to be advanced simultaneously, with the design principles being tested

and advanced in a real-life setting. It is this authentic setting with the goal of solving real-life problems that sets educational design research apart from other genres.

DBR is a methodological model with "three core phases in a flexible, iterative structure: investigation/analysis; design/prototyping; evaluation/retrospection" (McKenney & Reeves, 2012, p. 76). This research employed a four phase research design. These phases, including identifying and analyzing the problem, developing an informed practical solution, the development of iterative cycles of improvement and evaluation of the initial design principles. Based on a process described by Creswell and Plano Clark (2007) the local impact of this solution was evaluated through a series of iterative cycles of testing and refinement before the broader impact of the intervention was evaluated (McLean, Dixon, & Verenikina, 2014). The initial phase of the study drew upon previous research (McLean & Dixon, 2010) into the needs of teachers in isolated schools catering for the needs of students with oppositional behaviours. Further it involved consultation with a focus group of behaviour experts and interviews with the participant teachers, which this data assisted in refining the understanding of the participant teacher's needs and for development of initial design principles for the development of the BITTT site. The development and testing of the BITTT site formed phase two of the research. Phase three involved the iterative cycles of evaluation and improvement that occurred during the research period. Phase four involved a reflection on, and the

development of the revised design principles for the BITTT online community of practice.

This article focuses on the Phase three iterative cycles of testing and improvement that transpired during this research project. However, Phases one and two are also introduced, with particular focus on the initial design-based principles, which were derived from these phases. The initial design principles were then refined and reworked based on the evaluation criteria. The iterative cycles of design, testing and improvements comprise the core basis around which the design reaches its evaluative state. In this study the online learning site was evaluated using questionnaires. The data from the questionnaires, along with the site usage data and observations were analysed through the theoretical lens to improve upon the design of the online learning site.

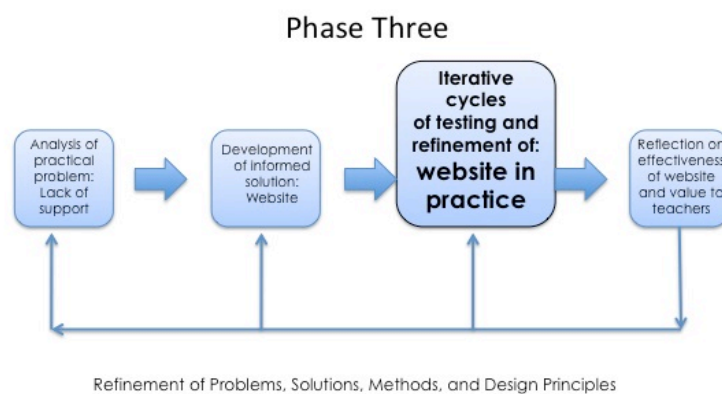


Figure 6.2 Phase three of the DBR project Bringing It To The Teachers, (Adapted from Reeves, 2006, p. 59)

6.4.3 Ethical Considerations

The nature of the discussions and issues raised by participant teachers calling for a high level of confidentiality was important. Informed consent was obtained from all participants and the data de-identified.

6.5 Data Collection and analysis

Data for this study was collected in a number of ways including a series of interviews and questionnaires from the participant teachers, a focus group of behaviour experts and an analysis of the data logs and teacher interactions on the site. The project ran for a total of 12 months over two school years to ensure the completed design was thoroughly tested. Participant teachers completed two interviews and three online questionnaires over the research period. These rich responses were thematically coded and applied to the research framework.

6.6 Developing the website

Phase one of the research involved consultation with the stakeholders such as experts in the field of oppositional behaviours, district guidance officers, teachers

and executive staff in isolated schools, as well as the current literature. The needs analysis involved an extensive literature review, as well as initial interviews with the participants. These responses were compared to a matrix of design principles highlighted in the literature (eg. Peterson, 2009; Eady & Woodcock, 2010; Wang & Hannifan, 2005; Swan, 2002; Hung & Chen, 2001). A focus group of behaviour specialists was then consulted to uncover the most effective strategies that are being used in schools, as this was part of the practical element identified as a specific need. This led to the development of preliminary principles for the design of BITTT online community of practice.

6.6.1 Preliminary principles

Previous research (McLean & Dixon, 2010) indicated that there is a need for a supportive, collaborative and targeted type of professional network in rural NSW. The preliminary principles for the design of the BITTT network were developed during phase one of the research using input from the panel of experts and the previous study, underpinned by the theoretical framework. The preliminary principles based on research presented in McLean and Dixon (2010) and Phase One of this research are listed below. The principles identified in Phase One were further refined and strengthened with the data collected and expanded to include additional features in the following phases of the research.

6.6.1.1 *Knowledge, a clearer understanding about the disorder (ODD)*

Teachers felt that they were underprepared to deal with students with ODD and oppositional and defiant behaviours, and that further training was required. The behaviour experts concurred on the importance of teachers understanding the disorder to effectively teach students with oppositional behaviours. The behaviour experts felt that teachers “really need to understand the disability.... what works and what doesn’t work with kids with those sorts of disorders”. Specific facts that are quick and easy to access were mentioned by teachers “I think diagnosis criteria would be useful”.

6.6.1.2 *Strategies, a range of new ideas to use with students with behaviour issues*

Teachers felt they needed a wider repertoire of strategies for use in the classroom with students with oppositional behaviours. They commented that finding strategies that worked consistently with these particular students was difficult, and it impacted on the learning environment for all students. They noted that having a student with the behaviour disorder in the classroom “makes it really difficult to teach” and “maintain a positive learning space”.

6.6.1.3 *Support, empathetic support from colleagues*

Teachers in isolated schools felt a need for specific support from colleagues, however found that support is not always accessible. One teacher stated that they wanted to “look at Best Practice [but] because we are isolated and remote I can’t go three suburbs away and look at another model that is working”. When asked about support from colleagues, some teachers stated that “I would absolutely want to share ideas with like minded people”. The isolated teachers felt this was “because you can talk about things that are going on that you might not have an answer for and you might be able to get feedback or advice or share things that are working in your room or try and seek information on things that are working for others”.

6.6.1.4 *Sharing, contributing to the knowledge of others*

Teachers felt that they would like to share their experiences and hear about other teachers’ experiences with students with oppositional behaviours. Further because of the isolation experienced by these teachers they highlighted the fact that gaining support is not always easy. They felt that “because I know what it is like to be stuck and think my god I can’t teach that kid, I don’t know what to do next”. In such cases the teachers “would be absolutely willing to say alright, well, this worked for me and it was really good”, sharing ideas and support with other community members.

6.6.1.5 *Reflection, strategies for reflection on practice and causation*

Reflection on current practices and comparisons with research based practices enable teachers to provide quality-learning environments for all students. The behaviour experts suggested that the need to “have professional discussions about things that we need to change” was important. Teachers suggested the social aspect of the online community of practice would help with this reflection and that “If you have a specific issue, rather than go and research it, you might jump online to the chat room and say I’ve got this problem has anybody come up with a solution”. Another teacher suggested that they “would like to be able to talk to teachers from other places more easily about kids with ODD and things like that about strategies, things that they have tried that have been successful”.

6.6.1.6 *Simplicity, an easy to navigate site with clear and easy links to information.*

Teachers in general were time poor, with most participant teachers spending an average of over three hours a day on school related work outside of general working hours. To offset this issue they suggested the site be “really easy to navigate, plain talking easily accessible”. Further the participant teachers

suggested that it could be “an easy access point, sort of like a one-stop shop if you like, where you can go and look for strategies and support and other things that people have used and found successful”. Most importantly the teachers stated that the “information being all together so you don’t have to look for it, so it is easy” and that “different people’s opinions would be nice to see what they think and what has worked for them”.

6.6.2 The BITTT Model

The initial BITTT site drew upon the identified principles in order to develop an effective Community of Practice using Design-Based Research. The researchers completed phase one of the research, which included a review of current literature, interviews with teachers in isolated schools of students with behaviour disorders and interviews with a focus group of expert behaviour teachers. These elements combined with the teacher feedback led to the development of the design principles and the initial BITTT site.

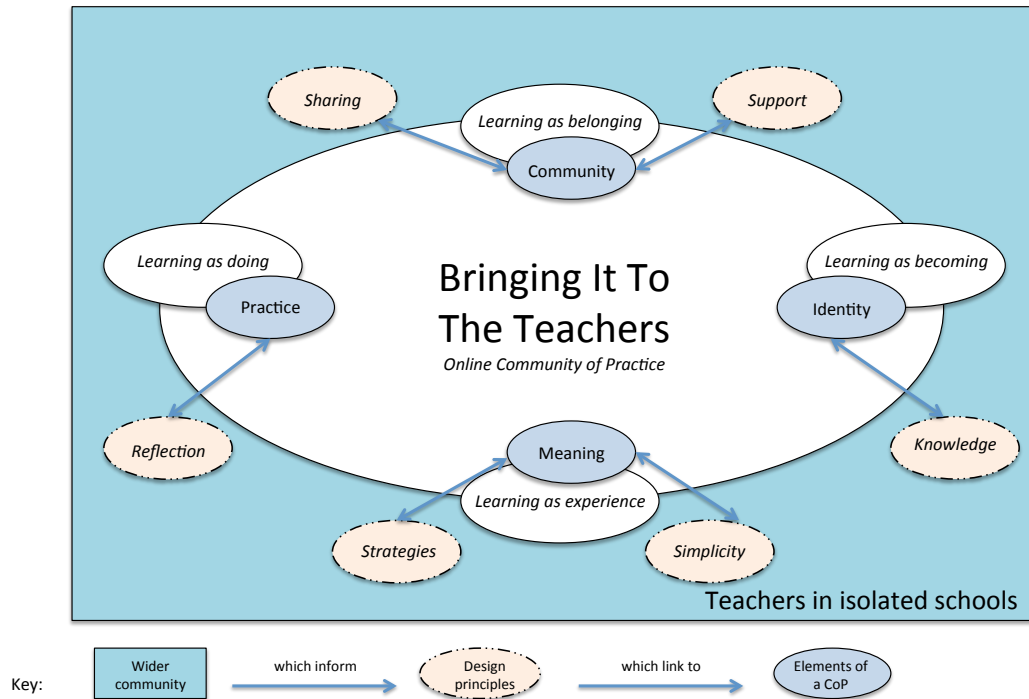


Figure 6.3 *The Bringing It To The Teachers Community of Practice model (Adapted from Wenger, 1998 p. 5)*

The preliminary design principles were used to shape the BITTT site in the following ways as shown in the above figure. To ensure the provision of *knowledge* for teachers in isolated schools, a folder full of resources was developed that focused on improving teacher *knowledge* and understanding about Oppositional Defiant Disorder (ODD) and related behaviours. This is linked to the theoretical concept of identity and of teachers learning by becoming more skilled in a community of practice (Wenger, 1998). *Strategies* were incorporated in the site with a folder

containing targeted strategies identified by the behaviour experts as ones that work with oppositional students. Further these strategies were brought to their attention by a 'strategy of the week' being highlighted on the main page. The strategies were linked to meaning making within the community of practice as teachers implemented those strategies is learning experiences within their own classroom (Wenger, 1998).

The *support* was integrated into the site by the provision of newsfeed, and the development of the fledgling community of practice. This allowed the teachers in isolated schools to share stories and socialise with like-minded colleagues in a virtual environment, linking it to the community where the teachers learned by belonging to that community (Wenger, 1998). *Reflection* was incorporated into the site with the posing of questions to the community participants. Participants were asked to reflect on their practice to highlight the strategies that worked well for them so that they can assist others. This linked to the teachers practice and them learning as they are reflecting on their own practice. With most people using Facebook and familiar with this style of site and with its *simplicity*, Edmodo was chosen as the most appropriate for the participant teachers, this further allowed the learning to be more meaningful (Wenger, 1998).

6.6.2.1 Iteration one: The Initial site BITTT V1

The initial site was developed in Edmodo, a 'Facebook' style blog, comment and post site developed particularly for teachers and students. The initial version of the BITTT site contained information about ODD, strategies for dealing with these students and a forum for social interactions.

After 4 weeks of initial use, the participants answered an online questionnaire that allowed the researcher to identify areas of possible improvement on the site. The questionnaire was developed after observation of the site and data logs. The data logs showed a lack of in-depth participation, which required further investigation. This coupled with researcher observations formed the basis for the first round of improvements. Analysis of the questionnaire and researcher observations led to the identification of an area of potential improvement.

One identified area of need was the ability to ask specific questions of an expert in the field of behaviour management. Participants suggested they would like to *'be able to ask specific questions that related to a child in my class that the other information didn't provide an answer to'* (Teacher 3). This was linked to the Principles of *Strategies* and *Support*. Whilst the strategies hosted on the site were those recommended by a focus group of behaviour experts, participants wanted

access to the experts to ask more specific questions. A behaviour expert was recruited to answer questions posed by the participants. This expert has 35 years of experience in a variety of behaviour and mainstream settings, and works particularly with students with ODD.

The fledgling development of the community practice had begun with people making cursory comments about the structure, information and strategies provided on the site. The participant comments suggested that they were reticent to ask questions in an open forum with such a small group of strangers. Wenger (2011) describes communities of practice as requiring “time and sustained interaction” (p. 2).

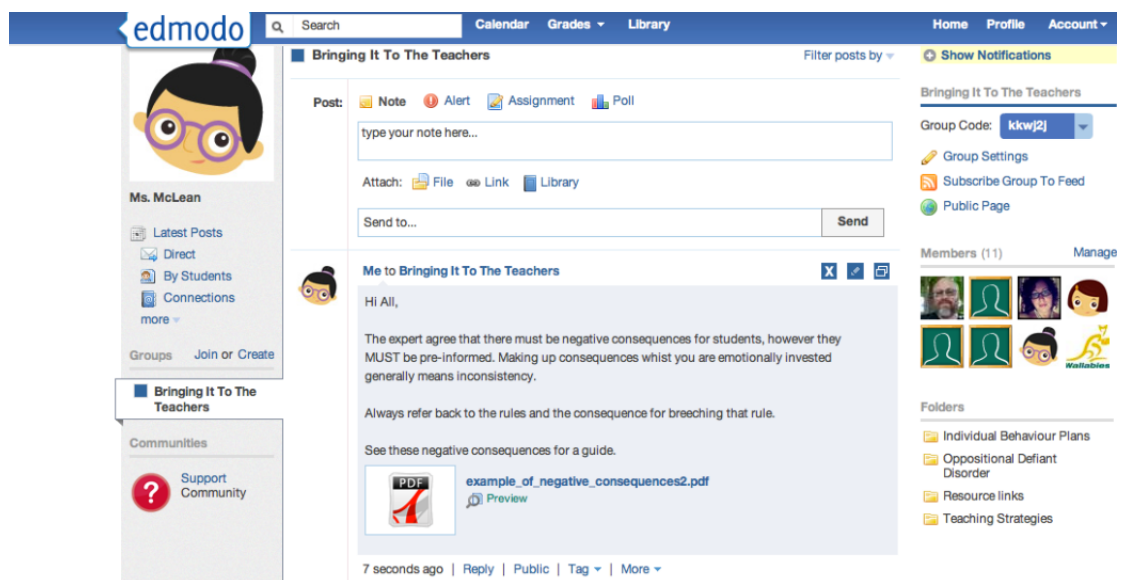


Figure 6.4 The BITTT V1 site in Edmodo

6.6.2.2 Iteration Two: BITTT V2

The Edmodo Version 2 BITTT site was modified to reflect the feedback from the first iterative cycle. The site incorporated an 'ask an expert' concept, with an experienced behaviour teacher, known as Dr Behaviour, answering questions posed by the community members. Community participants posted their questions in the main chat feed. This enabled other participants within the Community of Practice to read the question and response as well as contribute to the conversation. Most questions to *Dr Behaviour* were answered within 24 hours. An example of the questions posted are:

I was wanting to get some strategies for students who, even with consistent routine and consequences choose to do the wrong thing anyway?? (Teacher 8)

Having an issue at the moment.... The child struggles with Maths and this is setting them off for the rest of the day...tantrums, crying, hiding or moving around the room- its becoming a pattern everyday...I am giving them all of the support I am capable of in class but I am just wondering if you have any suggestions? (Teacher 4)

The participants continued to use the site an average of once a fortnight, and after 8 weeks then answered another round of the questionnaire. The data was then analysed with a main theme emerging: participants wanted the area of demonstrated examples of exemplary practice explored for example: *I want to use the strategies, but most of the time, when there is an issue I don't have the time to sit down and read. If there was a way that they could just show me, even just a snapshot, that would be great (Teacher 8)*. This linked to Principles of *Support, Sharing* and *Reflection*. Links to Youtube style video examples demonstrating techniques and strategies for behaviour management, was seen as a time effective method for participants to access information.

6.6.2.3 Iteration Three: BITTT V3

After consultation with the behaviour expert, video examples of appropriate exemplary practice were sourced, however no publicly available videos that fit within an appropriate context were located. The researcher, in collaboration with the behaviour expert, produced a series of behaviour videos that demonstrated appropriate examples of classroom practice. Eleven behaviour clips were produced, each with a different focus, for example: physical intimidation; girls fighting; passive-aggressive behaviour; escalation and de-escalation of violent behaviour.

The BITTT Edmodo Version three site utilised these videos clips. The clips were added onto the main screen of the site, as well as into the library, with each week having a different behaviour focus. The behaviour expert also suggested complimentary strategies that were posted in association with the videos to give participants a wider range of strategies.

Participants completed face-to-face interviews to discuss the advantages and disadvantages of the site. Analysis of this data showed that the participants were happy with the idea of the site, but preferred a different structure. Participants were very happy with the 'ask an expert' section, but identified real-time chats as something that would like to try. Participants further suggested that the chat be hidden and not the main focus of the site, and that the resources and strategies be the main focus. For example: *I don't really think the chat needs to be in your face, for me it is more about the strategies. I want to be able to locate them straight up and not have to go searching* (Teacher 7). This is linked to Principles of *Support, Sharing and Simplicity*. After consultation with several IT and social media experts, a new platform for the BITTT site was sourced. This led to the development of the final BITTT site.

6.6.2.4 Iteration Four: BITTT V4

The BITTT site was reconstructed in a new platform, in consultation with IT experts from the University of Wollongong. The BITTT site is now located in Drupal Gardens and is a publicly accessible site with the only the 'ask an expert' chat in a private 'password protected' area. This area is available by invitation only to protect the sensitive nature of discussions with the behaviour expert. The BITTT V4 site contains the same information presented in a more 'user friendly' manner, with the resources presented on tabbed pages as the main focus of the site and the chat section a secondary feature. Preliminary feedback from this last iterative cycle is that this is the preferred version for teachers in isolated schools.



Figure 6.5 The BITTT V4 site

6.7 Discussion and Conclusion:

The aim of this study was to support the needs of teachers in isolated schools, many of whom are beginning teachers, and are in need of relevant professional learning that helps them to grow and continuously improve their practice. Isolation, both geographic and social, can be debilitating to a beginning teacher's professional growth. The findings of this study demonstrated that there is not a single solution, but that a combination of solutions is best suited to meeting the needs of teachers in isolated schools in NSW.

The major finding of this study was that a combination of an online Community of Practice, which incorporates expert advice and targeted teacher professional learning in differing modes would assist teachers to better cope with the isolation experienced in rural NSW. The value of this resource for teachers in isolated schools was found to be significant, with an improvement in the management of students with oppositional behaviours and the promising signs of a developing support network. This is supported by the literature with Wenger (1998) stating that communities "as a locus of engagement in action, interpersonal relations, shared knowledge, and negotiation of enterprises, such communities hold the key to real transformation - the kind that has a real effects on people's lives" (p. 85).

Access to an online community is particularly relevant to the teachers in isolated schools where teachers have difficulties accessing traditional face-to-face support. Teachers in this study perceived significant improvements to their classroom practice with the additional support of the BITTT project, which concurs with Vescio, Ross and Adams' (2008) findings. Participant teachers were mostly limited in experience and their professional identities were still in the development phase, which makes it important that they are collegially supported. Validating the importance of teacher identity and its construction through interaction with colleagues and reflection on professional experiences, Tytler et al. (2011) state the importance of discourse communities within the school in forming teacher identity, emphasising the difficulty for isolated teachers to share professional discourse, further highlighting the importance of government and schools collaborating in ensuring isolated teachers have adequate access to these communities (Tytler, et al., 2011; Friesen & Besley, 2013). The BITTT community allows the development of these links.

Using the theoretical base of a community of practice (Wenger, 1998) and sociocultural theories of learning (Daniels, 2001) the researchers were able to design a community of practice to meet the needs of teachers in isolated schools of students with oppositional behaviours. The initial design principles of the BITTT site were closely linked to Wenger's (1998) model (Figure 1). This fledgling site required time to grow and improve, which could be predicted to happen when a greater

number of participants use the site. Teachers using the BITTT site suggested they would be more likely to participate in the Community of Practice when a greater number of teachers were using the site. This aligns with known theories of emerging communities of practice (Wenger, et al., 2002).

Design-Based Research was utilised to develop the online Communities of Practice, with the iterations an important tool in developing a workable solution in an authentic settings. The iterative cycles of improvement have seen the BITTT site develop into a sustainable, effective method of support for teachers in isolated schools. These iterations allowed the researchers to further develop a more refined solution, leading to better outcomes for the participants.

As a result of this finding the researchers recommend that the BITTT site or similar version be made available to teachers in isolated schools to further develop this fledgling community and be part of a holistic solution to mitigate isolation for teachers in rural NSW. This Community of Practice could be expanded further to encompass a wider range of behavioural difficulties and be adopted in other regions of NSW.

Recommendations for further practice and research include additional data analysis, which will see the development of a set of refined principles for an online community of practice for teachers in isolated schools of students with behaviour

disorders. These principles could be beneficial in establishment of online communities of practice for other education professionals with a variety of needs in isolated NSW. Future research might focus on the impact of improved social support and interactions on teacher retention in rural NSW.

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Iterative Cycles: Further Discussion

7 ITERATIVE CYCLES: FURTHER DISCUSSION

This chapter expands on the previous article, with the aim to provide further evidence for the sequence of the iterative cycles of testing and improvement for the Bringing It To The Teachers (BITTT) site. It will examine how and why the conclusions, which informed the iterations were reached and how they supported the data driven modifications. This Chapter covers Phase Three and Four of the research. This complementary information could not be included in the previous article (Chapter Six) due to the word limit required by the journal.

7.1 Introduction

In order to create an effective learning environment for teachers in isolated schools, it was first necessary to create design principles (DBRC, 2003) to guide the development of the online presence (Peterson, 2009). These design principles were developed in phase one of the BITTT research project, and refined throughout phases two and three using iterative cycles of testing and improvement. Design principles (outlined below) were created by triangulating data from the interviewed panel of experts, the literature, the candidate's previous study and the initial teacher interviews. The previous study was an Honours thesis, which assessed the support needs of teachers in isolated schools of students with ODD, the findings of

which were published in *Education in Rural Australia* (McLean & Dixon, 2010). The participant teachers for this study corroborated and expanded on the support needs from their own perspective. The principles described below interconnect and form a solid base upon which the BITTT project was based.

7.2 The Bringing It To The Teachers project

The BITTT project consists of three elements: the BITTT online learning environment; the BITTT Community of Practice (CoP); and the BITTT model. Explained below are the initial design principles developed in phase one and two of the research, the development of the BITTT model in phase two of the research and the iterative cycles of testing and improvement carried out in Phase Three of the research.

7.2.1 Initial design principles

The initial design principles for the BITTT network, developed during phase one of the research, were based on: the opinions from the interviews of four experts from the field of behaviour management; review of current literature; initial participant interviews and the data from the candidate's previous study (McLean & Dixon, 2010). The previous study was an investigation into the support needs of teachers in isolated schools of students with ODD and the findings informed development of

both the preliminary design principles and the initial interview questions. The development of the design principles was also guided by the theoretical framework of CoP (Wenger et al., 2002). Thematic analysis of the experts' interviews allowed the researcher to develop a conceptually clustered matrix which included teacher knowledge and skills; educational resources; teacher stressors; website design elements and CoP elements (see figure 7.1). The initial design principles (discussed below) are based on this conceptually clustered matrix derived from the expert interviews, and are further synthesised with the matrix derived from the literature (discussed in detail in Chapter Two). The visual representation below (Figure 7.1) shows the skills that the teachers of students with oppositional and defiant behaviours require in order to create effective learning environments. It also illustrates the components of the website and CoP, including resources, support, website and Cop design elements, as well as the stressors that impede teachers from active participation.

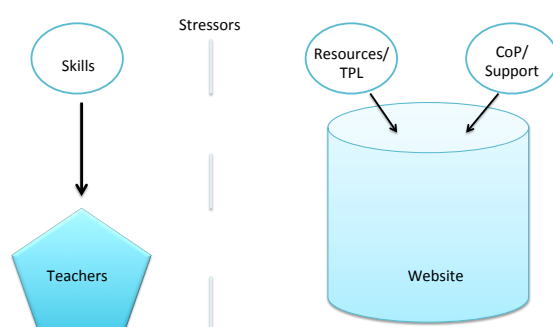


Figure 7.1 Visual representation of Conceptually Clustered Matrix

There were six initial design principles, which then were refined and reworked into eight final design principles presented in Chapter Eight.

7.2.1.1 *Knowledge, skills and understanding required by teachers of students with the disorder (ODD)*

In the interview all the experts agreed on the set of basic, essential skills and knowledge, which the teachers of students with oppositional and defiant behaviours would need to acquire. This content-related information, supported by the literature review, defined the knowledge foundations that were the cornerstone for the development of the professional support.

All the behaviour experts stated that teachers needed to be provided with explicit information about the disorder or disability that their students' have to support the teachers' understanding on how it impacts on the students' behaviour and learning. This information needed to include the expected behaviours for students with these diagnoses, and knowledge of why students behave in this manner. The teachers also needed support in the understanding of basic behaviour analysis to identify patterns within what Colvin (2004) called antecedent-behaviour-consequence cycle, and the implications of these behaviours on the whole learning environment.

The next area in which teachers needed support was the development of knowledge and expertise in interpersonal and advanced verbal skills. For example, teachers need to develop the ability to remain in control when dealing with escalating student behaviour, in order to negotiate, mediate and calm the student down. The insights gained from the three data sources emphasised that teachers would benefit from gaining the knowledge and skill in cognitive restructuring to allow them to challenge students' thinking and to enable the students to make appropriate choices, while also explicitly teaching decision making strategies.

Teachers required knowledge of preventative and responsive strategies and more specifically, an understanding of the nuances of how to implement them for students with oppositional and defiant behaviours. Basic limit setting and consistency are fundamentally vital strategies that have to be skilfully implemented (Webster-Stratton, Reid & Hammond, 2001). Teachers need to develop skills to implement these strategies including a clear and concise framework of rules and explicit routines. Teachers need to specifically educate students in how to follow the rules using clear, explicit, positive language in short sentences. The experts go on to suggest teachers need a negotiated reward system, so that the rewards are personally motivating to the students. The teachers must understand that with these students the rewards need to be extrinsic and that they need to be taught to intrinsically motivate themselves. Teachers also need to be able to: recognise behaviour escalation cycles, for example, the early stages of a confrontation; then

how to deal with these behaviours including, how to back out of a confrontation, how to avoid it, how to step around it, how to handle it and how to effectively resolve it.

All the experts suggested that teachers need to retain a calm, professional manner when dealing with students with oppositional and defiant behaviours. For example, they need to “not be oppositional [and] need to step back in a confrontation and give the student time” (Expert 1). It is important to intervene early, understand from first thing in the morning, if this is going to be a “bad day”. It is also necessary to have a differentiated plan for each oppositional and defiant student to minimise frustration and stress on the students (Expert 2). Functional Behavioural Analysis can also assist in understanding the behaviour of the students as triggers and stressors can be identified. A skill that teachers require is the ability to identify replacement behaviours. One expert (Expert 3) goes further to suggest individual treatment, by treating each student treated as a case study. Teachers also need the ability to depersonalise the behaviour, by just refocusing the student on the expected work.

Strategies include prevention, information and modification. Teachers need to build a culture of success within their classrooms which include students with oppositional and defiant behaviours, as a preventative strategy. Teaching students how to succeed by finding tasks in which they can achieve through the identification

of student strengths can create a means of success. Students also need to be pre-informed of the negative consequences of their behaviour. Teachers need to understand the importance of focusing on changing one behaviour at a time, by choosing the behaviour that has the greatest impact either socially, academically or physically. These behaviours may have taken years to develop, so cannot be expected to be modified in one term. The experts felt the knowledge of these theories and associated strategies were an important concept for teachers to grasp.

In the initial interviews (Phase One), the teachers stated the importance of the need for an explicit broad knowledge as they felt that they were underprepared in terms of knowledge and classroom management skills for dealing with students with ODD and oppositional and defiant behaviours, and that they required further training. Buchanan et al. (2013) noted that teachers, in particular those early in their careers, value opportunities for professional learning specifically when there is a limited pool of colleagues. Opportunities for professional learning were limited, due to geographical isolation and teachers suggested that targeted professional learning about teaching students with behaviour disorders is needed. The teacher participants felt they were disadvantaged by this lack of access compared to urban colleagues.

The expert panel suggested a raft of knowledge and skills that are essential for teachers to possess and be able to implement in order to effectively manage the

learning environment when teaching students with oppositional and defiant behaviours. The literature supports these views and that access to teacher professional learning is a contributing factor in retaining beginning teachers. In the initial interviews participant teachers voiced a desire to participate in additional learning, however, they also described a number of barriers which needed to be negotiated. Training is particularly important in the area of new targeted teaching strategies that have been shown to be effective for teaching students with oppositional and defiant behaviours, linking this principle of *knowledge* to the next principle of *strategies*.

7.2.1.2 Strategies for working with students with ODD and behaviour issues

All the four experts agreed that it was important for teachers to have access to a bank of a wide range of strategies, as students with oppositional and defiant behaviour can vary greatly. They suggested that such a range of strategies could include, for example, relationship building for students and teachers, resilience training, classroom system ideas, with examples of time out, positive and negative consequence systems.

All the experts suggested that one of the most important strategies that teachers of oppositional and defiant students particularly need included “providing a clear

framework of rules that are positively stated” (Expert 1), teaching students explicit strategies to gradually self-reward, and building a culture of success within the classroom. This framework of rules needs to be clear and succinct and consistently applied to give students an understanding of the clear boundaries of acceptable behaviour and the consequences for crossing those boundaries (Reike & Herman, 2002).

The behaviour experts also suggested that teachers need an effective time out system that allows for students to choose to remove themselves from a situation and gain physical distance. This is also a learned skill that teachers need to teach. Teachers need to help students to modify their thinking, to change emotion, to change behaviour. This can be achieved with a Cognitive Behaviour Approach, teaching students that every behaviour, is a planned behaviour, that comes from their own thinking. Some of these strategies would need resources, which could be placed within a type of electronic resource box, ready for when teachers need to access them.

The initial interviews of participant teachers identified a need for a wider range of strategies for use in the classroom with students with oppositional and defiant behaviours. They suggested that strategies that worked consistently and in the long-term were a priority for a harmonious learning environment. The participant teachers felt hindered in retaining a positive learning environment when the class

contained students with oppositional and defiant behaviours, and felt the need to try differing strategies.

Therefore, the significant data points used to inform this principle were the importance of an emphasis on educating students with oppositional and defiant behaviours with reliable and valid strategies, and on creating a successful classroom environment as identified by the teachers, the experts and in the literature. The range of strategies recommended by the experts and supported by the literature also enabled the practical application of this principle directly onto the BITTT site.

7.2.1.3 *Support - empathetic support from colleagues*

All the experts stated that teachers of students with oppositional and defiant behaviours need to have a structure of support to help them to cope with the additional demands of teaching these students. They suggested that teachers have a need for “professional discussions about things we need to change” (Expert 1) in the classroom and school environments. Another expert suggested that “isolation is a compounding issue, it is compounding for both the students and the teachers” (Expert 3), and that “a lot of teachers get frustrated and they think the only answer is a discipline answer” (Expert 3). This expert also reiterates the importance of social interactions with other teachers experienced in practical management of students with ODD and associated behaviours. The importance of hearing from

"other teachers with similar kids so you realise that you are not on your own and it is not you" (Expert 2) is clear.

The research highlighted the importance for teachers to have professional discussions to ensure that they are confident in their understanding of the major approaches. For example, Buchanan and colleagues talk about the need for a discussion of behavioural incidents in an analytical way (Buchanan et al, 2013). Tytler et al. (2011) advocates for the utilisation of professional discussions in 'discourse communities' as a means of professional development for teachers in rural schools (p. 877).

Teachers in isolated schools felt a need for collegial support but found accessibility to that support was hampered by their location (McLean & Dixon, 2010). In the initial interviews, one teacher suggested observation of fellow teachers using best practice techniques in situ would be advantageous but impractical in isolated areas. In regards to support from colleagues within the school some teachers (4 out of 10) felt that they were "on our own", whereas others (3 out of 10) were able to access more experienced colleagues. Some teachers (3 out of 10) turned to colleagues from previous school environments for advice and support.

Aspects of the data used to inform this principle include the need for collegial support, which in rural and isolated schools was highly important (Buchanan et al.,

2013; Tytler et al., 2011; McLean & Dixon, 2010), but sometimes found to be insufficient or ineffective (McLean & Dixon, 2010). A support structure that includes social interactions could be helpful.

7.2.1.4 *Sharing, contributing to the knowledge of others*

Sharing knowledge is an important element of improving professional practice. Vescio et al. (2008) discusses the shift away from “traditional models” of professional development, to a model that increases professional knowledge based on supporting teachers to “make decisions based on their contexts, their goals, current and new professional knowledge and the needs of their students” (Vescio et al., 2008, p.89). This can be achieved through sharing and collaborating with others in the Community of Practice (CoP), which is a framework in which a group of people network and share common experiences, issues and problems (Wenger et al., 2002). In a CoP, members have opportunities to network socially through community interactions. These social interactions are important as they can support the building of social relationships. In isolated schools social interactions are often limited, the BITTT CoP sought to enhance this by broadening the members’ social network.

All the experts stated that social interactions are an important part of ‘self care’ when teaching students with oppositional and defiant behaviours, “I think that the

social relationships..... social interactions are the most important thing” (Expert 3). Interactions with “empathetic people with a clear understanding ... and a big shoulder” was suggested as preferable (Expert 4). Also, a “chat room is very, very important, so you can debrief and get support” (Expert 1), further “social interactions with other teachers, with more experienced teachers, who have experience with students with ODD” (Expert 3) can assist teachers to improve professional practice.

Participant teachers stated that sharing of experiences with other teachers of students with similar behavioural difficulties would be advantageous. Due to the isolation faced by teachers in isolated schools the participants stated that gaining support was not easy. The previous study (McLean & Dixon, 2010) corroborated these findings with teachers feeling a distinct lack of support. One teacher felt that “because I know what it is like to be stuck and think my God I can’t teach that kid, I don’t know what to do next” (Teacher 13). Teachers like the latter, who had experienced the need for assistance, (but had limited options open to them) voiced empathy for other teachers in similar positions and professed a desire to share what worked for them with other community members and thus “would absolutely want to share ideas with like minded people” (Teacher 7). The data informing this principle was drawn from the participant interviews and supported by the experts and literature.

7.2.1.5 *Reflection, strategies for reflection on practice and causation*

Reflection on current practice is an important mechanism for improving professional practice. When exploring the “collaborative construction of knowledge online” Seddon and Postlethwaite (2007) identified differing levels of learning behaviour within an online learning environment. They highlighted that reflection is present in each level of learning behaviour accentuated the importance of reflective practice. The Seddon and Postlethwaite (2007) study utilised participatory action research, which similar to this study was based in social constructivism. The experts stated that teachers need to be flexible; they also need to have a high level of trusting interaction with the support provider, reflect on their behaviour and its interactions and effects on the students.

The candidate’s previous study utilised reflection to identify triggers to student behaviours. This assisted in supporting the teachers understanding of the cause of behaviour and an understanding of the role their practice plays in the behaviour cycle (McLean & Dixon, 2010). The participants in the current study also utilised reflection, in the manner of reflective journals to identify problematic behaviours within their classrooms. These reflective journals were filled out every day for the two weeks preceding the initial interview and utilised as a stimulus by the participants for discussion in the interviews. For example, Teacher 3 found that “when I looked at the antecedents and when I looked at the behaviour and I looked

at the results.... as soon as I asked him to work independently that was when he acted out I never noticed that before completing the diary". The experts agreed that reflection on practice is a "powerful tool" (Expert 4).

The principle of reflection was required to meet the need for reflective practices as suggested by the data. This need was supported by the provision of resources and frameworks that assisted participants to think reflectively about their teaching and learning environment and how all the elements work together to effect the learning and behaviour of students.

7.2.1.6 *Simplicity, an easy to navigate site with clear and easy links to information.*

An overarching finding highlighted in the data from teachers and behaviour experts was the necessity to make any intervention or resource clear, concise and easy to use. Teachers spend many hours a day on school related work outside of general working hours. These extracurricular activities included lesson planning, resource construction, leading the choir, and/ or band in after school practice and team coaching to name a few. The teachers suggested quick and easy access to a "one-stop shop" for support and strategies, would best meet their needs. Swan (2002) concurs on the importance of a consistent layout and clear navigation in the development of online learning communities. In assessing the value of distributed

learning environments Fletcher (2013) reported that “technology based instruction has been found to decrease the time needed to reach targeted instructional objectives” (p. 49). This demonstrates the importance of reducing the time burden on community members and the supporting literature informed this principle.

These are the six principles identified during phase one of the research, which were refined and strengthened with the iterative cycles of testing and improvement described below. The principles also informed the BITTT Model, which demonstrates the link between the design principles, the underlying theories and the elements of the CoP. The iterative cycles led to a corresponding modification in the BITTT Model.

7.2.2 The BITTT Model

The initial BITTT site drew upon the identified principles in order to develop an effective CoP using DBR. This model was developed in order to explain in a theoretical manner how these design principles, the BITTT site and CoP worked together. The BITTT Model was created to explain the interactions of the community members with the BITTT site and the learning, using the underlying theory of CoP. The researcher completed phase one of the research, which included a review of current literature, interviews with teachers in isolated schools of students with behaviour disorders, and interviews with a focus group of expert

behaviour teachers. These elements combined with the teacher feedback led to the development of the design principles, the initial BITTT site and the initial BITTT Model.

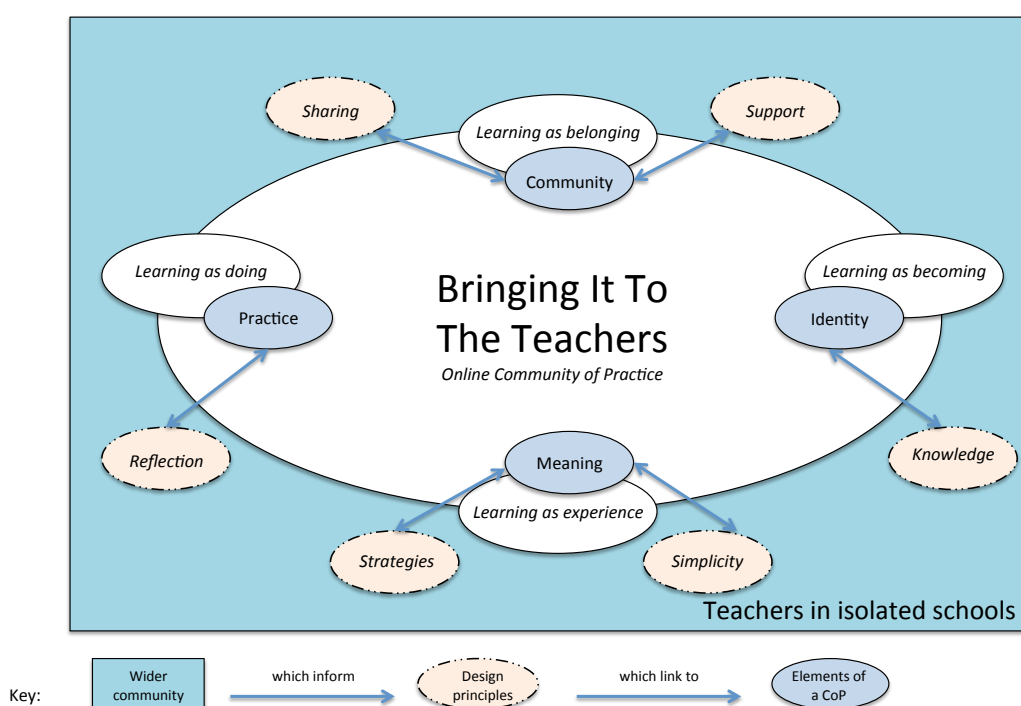


Figure 7.2 *The Bringing It To The Teachers Community of Practice model (Adapted from Wenger, 1998 p. 5)*

The preliminary design principles were used to inform the development of the BITTT site. These are shown in the model above. To ensure the provision of *knowledge* for teachers in isolated schools an electronic folder full of resources focused on improving teacher *knowledge* and understanding about Oppositional Defiant Disorder (ODD) and related behaviours was included. Although students in isolated areas tend not to be officially diagnosed, the focus students demonstrated

the same behaviours and the same strategies are effective with these students. In reference to the above BITTT model, based on Wenger's research (1998), demonstrates the how the BITTT online learning environment, and the design principles it is built on interact with the theoretical construct of Communities of Practice. The model further indicates how it sits within the wider isolated teacher community (indicated in blue). The BITTT CoP itself is indicated in the large white oval, with the elements of Wenger's (1998) CoP model indicated by the blue embedded within the CoP. The cream coloured ovals represent the BITTT design principles and how they interact with the CoP elements through the learning that community members do (small white ovals). The theoretical concept of identity allows teachers to learn by becoming more skilled. Each of the design principles listed above in the model were integrated into the site in the following manner: *Strategies* were incorporated into the site with a designated folder containing teaching, learning and classroom management strategies that were identified by the behaviour experts; these strategies were further highlighted by a 'strategy of the week' being emphasised in the main chat feed; as the teachers implemented these strategies, these learning experiences allowed them to make meaning within the community of practice (Wenger, 1998).

Within the BITTT site, the *support* was integrated into the site by the chat feed, which allowed participants to interact with each other via the messaging medium. As this was only a fledgling CoP, the interactions were limited at first, but allowed

the teachers in isolated schools to share stories and socialise with like-minded colleagues in a virtual environment. These interactions encouraged a sense of belonging to the community and thus allowed the teachers to learn by belonging to that community (Wenger, 1998). Support was an important component mentioned in the literature (Reynolds et al., 2011) and by the experts.

The element of *Reflection* was incorporated into the site, linked to the teachers' practice and encouraged their learning as they are reflected on their own practice. Participants used reflection on their own practice in dealing with the oppositional and defiant students to understand the antecedent-behaviour-consequence cycle and to uncover the strategies that worked well for them, which they were encouraged to *share* in order to assist others. The *sharing* allowed community members to build a sense of belonging. With all but one of the participants using Facebook and/or Edmodo, the teachers were familiar with this style of site and valued its *simplicity*, which allowed the learning to be more meaningful (Wenger, 1998).

7.2.3 Iterative Cycles of the BITTT site

After the initial construction of the BITTT site, in keeping with design-based research, the site and CoP were trialled in the authentic setting. The iterative cycles of testing and improvement were based on data received from participant

questionnaires, observation, analysis of data log and consultation with relevant literature. The below description is an augmentation of the finding discussed in Chapter Six.

7.2.3.1 Iteration one: The Initial site BITTT V1

The initial site was developed in Edmodo, a 'Facebook' style blog, comment and post site developed specifically for teachers and students. Utilising the initial principles the first version of the BITTT site contained folders of resources including: information about ODD which covered diagnostic criteria, characteristics and current research into the disorder; strategies for dealing with these students in a classroom as recommended by the behaviour experts and a forum for support and social interactions with other teacher participants.

After 4 weeks of initial use, the first iterative cycle was concluded with the participants filling in an online questionnaire, which was developed after observation of the site and analysis of the data logs. The data logs showed a lack of in-depth participation, with participants having a cursory view of the site and the resources, but not returning regularly. Analysis of the questionnaire and researcher observations led to the identification of an area of potential improvement, which formed the basis for the first cycle of improvements.

The questionnaire asked participants to rate the ease of use for the site, with half of the participants finding it simple and half found it user friendly. Most of the participants looked at the site on a weekly or fortnightly basis. When participants were asked to rank the elements of the site, 83% ranked the teaching strategies the most useful. Other elements found useful by 50% of participants included contact with other teachers and tips from the experts. The IBP resources were the only element found not useful to any participants. Teacher participants felt they wanted greater access to a behaviour expert.

Participants felt that some elements required modification, for example, 30% of participants requested more specific and detailed information about consequences and rewards systems that work for students demonstrating oppositional and defiant behaviours. To answer this need, specific information was sourced from the expert panel for appropriate methods of implementing rewards systems for these students, which differed from the generic system in place for mainstream students. These resources were placed in the folders and also highlighted in the 'News feed'.

The strategy of reposting information on the newsfeed was used to highlight new information or existing resources that participant teachers may not have seen. This was acknowledged by the participant teachers as an effective way of presenting a 'resource of the week'.

One identified area of need was the ability to ask specific questions of an expert in the specific field of managing students with oppositional and defiant behaviour. Participants suggested they would like to *'be able to ask specific questions that related to a child in my class that the other information didn't provide an answer to'* (Teacher 3). The experts also agree with this notion stating that "access to [an] expert" (Expert 3) or an area in the site where teachers can get advice. This was linked to the Principles of *Strategies* and *Support*. The strategies hosted on the site were recommended by behaviour experts. In addition, a behaviour expert with 35 years of experience in a variety of behaviour and mainstream settings was recruited to address the participant concerns and answer their questions.

The CoP requires time patience and momentum to flourish. This begins with community members familiarising themselves with the site before real participation occurs. The participants suggested that they felt uncomfortable being the first to ask a question. This phenomenon is reflected in the literature with Wenger (2011) noting that CoP's require "time and sustained interaction" (p. 2) to fully develop.

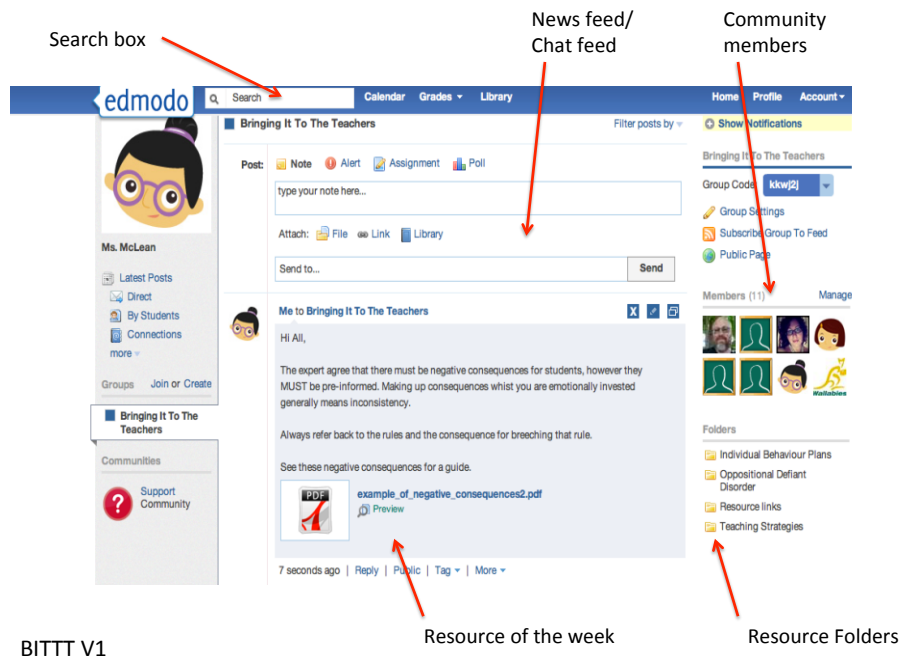


Figure 7.3 The BITTT V1 site in Edmodo

7.2.3.2 Iteration Two: BITTT V2

The Version 2 BITTT site was modified to reflect the feedback from the first iterative cycle. This version of the site incorporated the ‘ask an expert’ concept, with *Dr Behaviour*, an experienced behaviour teacher, answering questions that were posed by the community members. Community participants posted their questions in the main chat feed, as shown in Figure 4. The questions to *Dr Behaviour* were answered within 24 hours. Having the questions and answers posted on the main

page enabled other participants within the community of practice to read the question and response, as well as to contribute to the conversation. Examples of the questions posted are:

Having an issue at the moment.... The child struggles with Maths and this is setting them off for the rest of the day...tantrums, crying, hiding or moving around the room- its becoming a pattern everyday...I am giving them all of the support I am capable of in class but I am just wondering if you have any suggestions? (Teacher 4)

Dr Behaviour gave the following response, which gave Teacher 4 in depth strategies to implement with the student:

Hi [Teacher 4], I am not sure how old your student is, but you can bet that fear of failure and fear of getting it wrong will be a factor in this behaviour. Kids readily engage with learning if they feel confident and successful but will be reluctant and downright disobedient if it makes them feel unsuccessful.

There are a few things that might help break the cycle:

**Use concrete materials with a maths bent - Calculators, Lego, tangrams etc. to get the child interested and engaged and connecting Maths to their life.*

** Set up a Maths contract with individual rewards of some kind then chunk up the Maths into smaller tasks so they can earn points. Make an agreement to have the child's preferred activity or privilege straight after Maths - they get to do this if they have completed their tasks and the Maths is done.*

** Design a Maths activity that includes colouring in, games, cutting out or something that connects to the preferred activity.*

** Use your IWB if you have access to one to get interactive Maths games online, use them as a class reward and an individual reward for this student.*

** One of the resources we use to engage mathaphobic students at our behaviour school is a web-based Maths resource called Mathletics. It costs schools \$30 per student per year to register at school and caters for students K-12. You can enrol students at their level of development and let them work forward.*

It has been a wonderful resource for our students as it covers the full Maths curriculum and measures all the stage outcomes letting you see how your students are doing. Maths is presented in a game type environment with teaching tutorials and problems to solve to meet each outcome. Kids can access at school and on their home computer. They earn game privileges as a reward for completing Maths modules can play games online with kids in other schools. It is a sure fire cure for Mathaphobia.

Dr Behaviour described a range of strategies and resources that would assist Teacher 4 in engaging the target student in Mathematics. The expert also suggested an individual contract with reward system, as well as specific activities and engaging in relevant online programs. This advice was timely for the teacher and gave her many suggestions to try with the student. The idea of connecting Maths to a preferred activity, for example colouring or gaming, is very relevant for students who struggle to engage in Maths activities.

Another example of a question and response are:

I was wanting to get some strategies for students who, even with consistent routine and consequences choose to do the wrong thing anyway?? (Teacher 8)

Dr Behaviour's response:

I know it is frustrating when we think kids are deliberately choosing negative behaviour. This is where our patience and perseverance is really tried and as teachers we have to dig deep. Teaching defiant and resistant students is hard work. Don't be afraid to justify why we have rules and routines and spend time teaching, re-teaching your rules and routines. Even if the routines are consistent some kids will need constant reminders and positive performance monitoring. It's a pain I know but as someone who does this every day I know it works even with the most difficult kids. Some kids will need to practise dozens of times to get it right. Make sure rules and routines are all positively phrased - what to do rather than what not to do. Give descriptive praise when these are performed correctly, make kids who are reluctant rehearse them many times (in their own time if necessary) until you are certain they are correct. We need to let kids know that if it is a social skills performance deficit rather than a knowledge deficit we can hang in and go over it until they get it right. If they whinge say : "I know you know we have learned the routine but I am just checking you can get it right. I am going to be really persistent help you get it right." I would recommend that at the same time you increase your positives. Start with increased positive verbal acknowledgement for kids exhibiting positive learning and social, try to make a conscious decision to use a ratio of at least 4:1 positive to negative comments. This increases the amount of teacher attention being paid to positive behaviour and makes this behaviour more efficient. Tactically ignore a negative attention seeking behaviour unless it is disrupting learning. Negative consequences will be your last resort but it may help to give some students target behaviours for your lesson. eg. enter the room quietly, stay on task, If they meet the target they can be rewarded with merits stickers, privileges etc - if not you can negotiate how many rule reminders (say 4) will result in a class detention or loss of privileges. Try not to take the behaviour personally and focus on what you want kids to be doing. Patience and perseverance will pay off in the end.

Dr Behaviour reinforced the teacher's understanding of the behaviour and provided reassurance. Specific examples of the strategies for students with oppositional behaviours and an exemplar line of reasoning to assist in keeping students on task were given. The examples and reinforcement are always positively stated, which gives the teacher an illustration of appropriate models of behaviour.

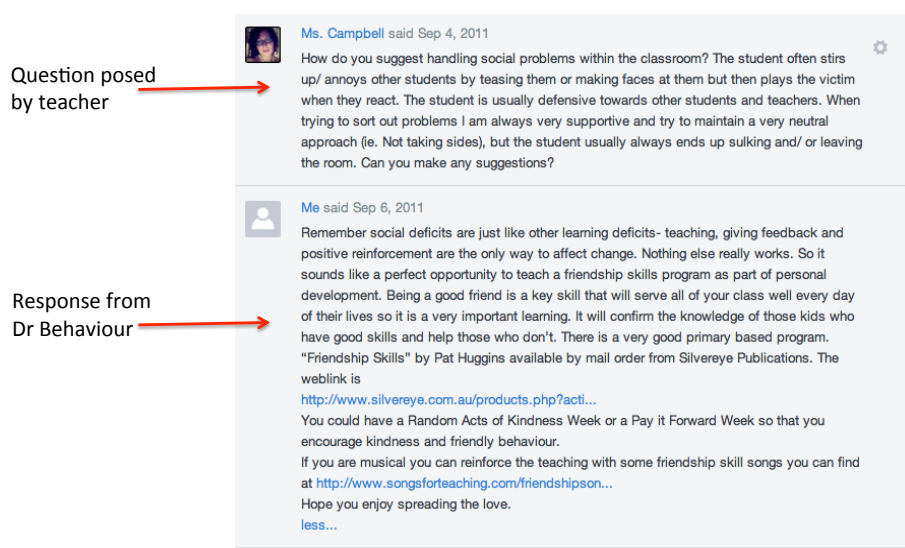


Figure 7.4 Sample of *Dr Behaviour*'s responses to the 'Ask an expert' question

The second round of questionnaires was distributed after 8 weeks of use on the site (or four weeks during iteration 2). The data were thematically analysed and revealed several themes. Participants voiced a desire for demonstrated examples of the exemplary practice explored, such as:

I want to use the strategies, but most of the time, when there is an issue I don't have the time to sit down and read. If there was a way that they could just show me, even just a snapshot, that would be great (Teacher 8).

Another theme that continued to be a factor in teacher participation in the CoP was time, even when the participants acknowledged that the answer that they were in search of was probably on the site. This linked to Principles of *Support, Sharing and Reflection*. In order to meet the two main themes, links to Youtube style video examples demonstrating techniques and strategies for behaviour management, were seen as a time effective method for participants to access information. This was supported by the experts who suggested “little movies” or “role play scenarios” that use explicit modelling to demonstrate common behavioural occurrences with these students (Experts 1 & 3). Also, a “Youtube clip where an expert role plays a critical incident” with a student would be very beneficial to the participant teachers. In consideration of the participant time pressures the clips should be limited to short excerpts.

7.2.3.3 Iteration Three: BITTT V3

Following the data analysis of the second questionnaire a behaviour expert was consulted and video examples of appropriate exemplary practice were sourced. There were no publicly available videos that fit within an appropriate context. There were many video examples, but the focus of these examples was of what NOT to do. In keeping within theoretically appropriate behavioural examples it was illogical to post negative examples. The researcher, in collaboration with the

behaviour expert, and utilising a grant from the University, worked with a professional producer to produce a series of behaviour videos that demonstrated examples of best classroom practices. Eleven behaviour clips were produced, each with a different focus, including: physical intimidation; girls fighting; boys fighting; giving choices; non-compliance; protestive compliance; smart arse comments; passive-aggressive behaviour; escalation and de-escalation of violent behaviour.

These loosely scripted videos were produced with the cooperation of a local high school acting class. The students reacted naturally to set classroom disruptions, including oppositional and defiant behaviours and incidents. The experienced teacher in the behaviour videos used best practice techniques to demonstrate how to deal with the situation, for example how to de-escalate a violent situation. This is a unique opportunity for teachers to have a birds eye view of experiences that are generally not seen by an outsider where teachers usually learn by hit and miss experiences. If teachers can see and have a theoretical understanding of the steps to take, they are more likely to be able to implement these strategies in the classroom when they occur.

The BITTT Edmodo Version three site utilised these video clips as an exemplar of best practice with a theoretical underpinning. The clips were added into the library of the site and a weekly behaviour focus was highlighted in the newsfeed. The behaviour expert also suggested complimentary strategies that theoretically

supported the behaviour focus of the week and these were posted in support to give participants an additional range of strategies.

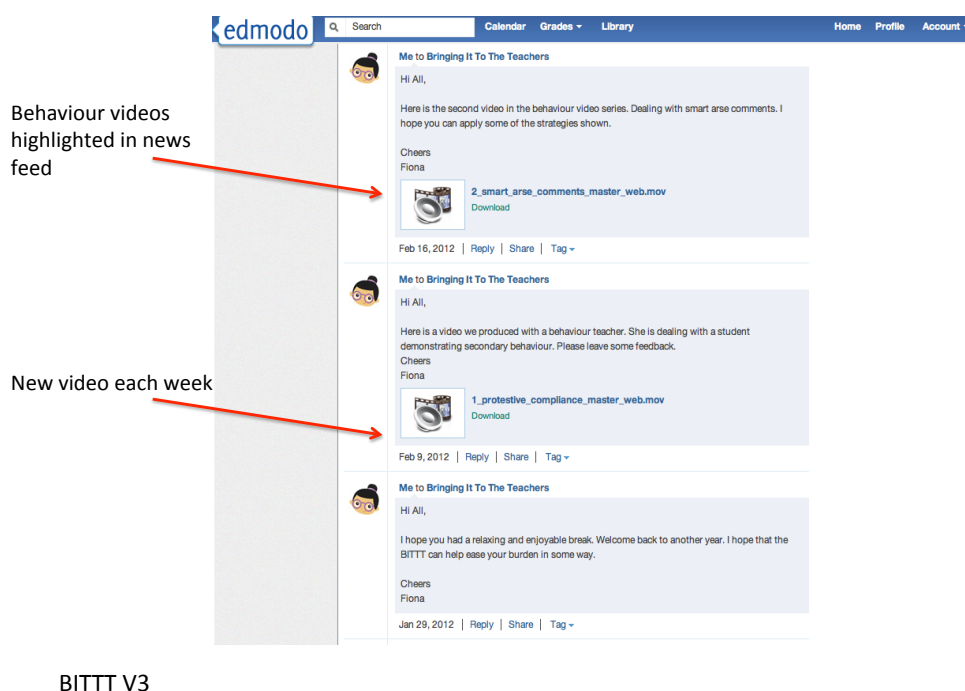


Figure 7.5 BITTT V3

Participants contributed to the final iterative cycle with face-to-face interviews which discussed the advantages and disadvantages of the site. This data was thematically analysed to identify the strengths and weaknesses of the site. The main themes included benefits of the site and CoP, effective strategies, the tangible improvements in student behaviour, site usability issues and suggestions and barriers to participation.

Many participants (70%) were very happy with the ‘ask an expert’ section, with 50%

posing questions to the expert at various times. They suggested that real-time chat with a behaviour expert as something that would be beneficial. Some participants (30%) suggested that the chat should be hidden and not the main focus of the site, and that the resources and strategies be the main focus, for example: *“I don’t really think the chat needs to be in your face, for me it is more about the strategies. I want to be able to locate them straight up and not have to go searching”* (Teacher 7). As 83% of participants stated that they utilised the strategies first and foremost, and as the chat stream was under-utilised, a modification based on this feedback was feasible. This is linked to Principles of *Support, Sharing* and *Simplicity*. After consultation with several IT and social media experts, a new platform for the BITTT site was sourced. This led to the development of the final BITTT site.

7.2.3.4 Iteration Four: BITTT V4

The BITTT site was reconstructed in a new platform, in consultation with IT experts from the University of Wollongong. The BITTT site is now located in “Drupal Gardens” and is a publicly accessible site with the only forum being the ‘student behaviour forum’, previously called the ‘ask an expert’ chat, in a private ‘password protected’ area. This area is available by invitation only to protect the sensitive nature of discussions with the behaviour expert. The BITTT V4 site contains the same information presented in a more ‘user friendly’ manner. The resources are

presented on tabbed pages as the main focus of the site and the chat section is a secondary feature, also located on a tabbed page. Live chat time with the behaviour expert is advertised on the home page. Feedback from this last iterative cycle revealed that this is the preferred version for participant teachers in isolated schools.

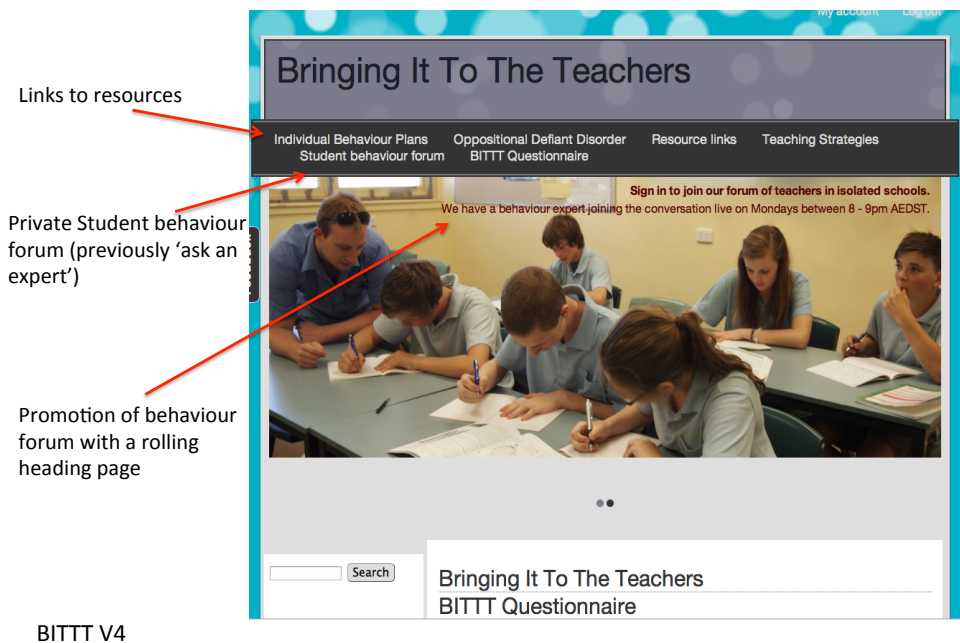


Figure 7.6 The BITTT V4 site

7.3 Conclusion:

The initial design principles for the BITTT network were developed using four data points, a literature review, interviews of four behaviour experts, data from the previous study and initial participant interviews. The six initial principles were:

1. *Knowledge*: skills and understanding required by teachers of students with

the disorder (ODD)

2. *Strategies*: a range of strategies for working with students with ODD and behaviour issues
3. *Support*: empathetic support from colleagues
4. *Sharing*: contributing to the knowledge of others
5. *Reflection*: strategies for reflection on practice and causation
6. *Simplicity*: an easy to navigate site with clear structure and information and easy links to information.

These six initial design principles, developed in Phase One and implemented in Phase Two, were refined and strengthened during the iterative cycles of Phase Three of the research. The cycles of testing allowed for modifications to the site, and corresponding CoP, to be trialled by the participant teachers in their authentic setting. Their feedback via the questionnaires, usage statistics, researcher observations and literature corroboration informed the modifications that began each iterative cycle.

The iterative cycles allowed the BITTT site and model to develop into an effective usable online learning environment. The participant teachers, during the research period helped shape the BITTT online learning environment and CoP, which in turn informed the model and final design principles. These design principles are discussed in the following chapter (Chapter 8).

Discussion

8 DISCUSSION

8.1 Introduction

In this chapter, a discussion of key findings and conclusions drawn from the data are presented. The BITTT project has three main components, the BITTT online learning environment (site), the BITTT Community of Practice and the BITTT model. These are presented in three sections:

- a discussion of the findings in alignment with the literature related to Communities of Practice (CoP), Design-Based Research (DBR) and teachers in isolated schools;
- a discussion of the development of the BITTT model, and
- answers to research questions in relation to the current research, and the practical implications of using the BITTT site and CoP for teachers in isolated schools.

The purpose of this study was to investigate appropriate ways to support teachers at isolated schools of students with behaviour disorders and oppositional and defiant behaviours. This was achieved by using design-based research to analyse, develop, test and refine an online learning environment to meet the needs of these

isolated teachers. The major outcome of this research was the development of design principles for an online CoP for teachers in isolated schools. Other findings included the need for a greater level of support for teachers in isolated schools, which, if provided, may mitigate some of the factors of isolation and assist teachers to further develop their professional identities.

8.2 The BITTT Community

The major findings of this study include: identification of links between teachers' developing professional identity and the role of professional isolation; the importance of access to professional learning opportunities; teacher efficacy and stressors and time constraints that created significant barriers to participation in the CoP. The BITTT community and the role the CoP played in expanding teachers' opportunities to improve practice and develop strong efficacy and professional identity will be discussed.

8.2.1 Professional Isolation and its link to professional identity

The first key finding in this study was that teachers in isolated schools identified the need for relevant professional learning that would assist them to improve professional practice and establish a professional identity. Being part of the BITTT

CoP empowered the participants by providing the opportunity to connect with other teachers in isolated schools, who shared similar experiences (Teachers 7, 8 & 9). Teacher 8 found the BITTT site to be *“an easy access point, sort of like a one-stop shop if you like, where you can go and look for strategies and support and other things that people have used and found successful”*. Teacher 8 stated *“I liked the discussion and am happy to participate”* and Teacher 9 found the BITTT CoP to *“be tremendously of benefit”*. All the participants indicated that prior to their participation in the BITTT CoP they felt isolated in their everyday practice. This result is well documented in literature; for example, Lyons et al. (2006) found that teachers in isolated schools felt disadvantaged by geographic isolation, as it led to a sense of professional isolation. This professional isolation, for beginning teachers, may also impact on their personal lives, which in turn can lead to a higher attrition rate (Pranther-Jones, 2011; Brasche & Harrington, 2012; Cancio et al., 2013) from the teaching profession.

Participation in the BITTT CoP, the knowledge that others shared the same sense of isolation and the ability to share these experiences in a safe environment, empowered the participant teachers to attempt new strategies. The community members recommended new strategies to each other, which were then implemented in classrooms. An experienced behavioural professional suggested additional strategies. The ability to ask questions of, and get feedback from the ‘expert’ on the most effective types of strategies to use in the classroom was

“invaluable”, “objective” and “highly useful” for the teacher participants (Teachers 2, 4 & 8). This finding was not surprising, as it echoed previous literature which described the role of professional learning communities in reducing this sense of professional isolation (Meyer, Nathan & Saxton, 2006).

Access to professional expertise allowed participants to be reflective of their own practice in order to build professional identity and mitigate feelings of isolation. Some participant teachers (6 out of 15) reported that the growth of their professional identity, although still developing, was somewhat hindered by the isolation. They felt that not only was the access to other teaching professionals and teacher professional learning limited, but also there was a limited range of student ambitions within their class. In looking at the development of professional identity in teachers, Oztok (2013) concurs that encouraging the sharing of “values, experiences, and opinions to facilitate knowledge-based learning interactions” (p. 26) is important in order to enhance professional identity. Further, O’Connor (2008) states that “teachers’ identities are complex and socially situated within lived experiences” (p. 126). The quality of such experiences can impact on teacher engagement with the learning environment. The BITTT CoP sought to alleviate the disadvantages that teachers in isolated schools experienced by assisting them in developing a well-rounded professional identity.

The construction of teacher professional identity is a dynamic process, which

involves both “person and context” where teachers are active agents in the “process of professional development” (Beijaard, Meijer & Verloop, 2004, p. 122). One aspect of professional development is increasing understanding and expertise in the profession by participating in further learning. The literature examining professional learning and how teaching and learning involves interaction and collaboration between professionals to improve practice, finds that opportunities for interaction, collaboration and professional learning are an important aspect of professional growth (Borko, 2004).

Teachers in this study felt that their professional identity would be enhanced by social interactions within the BITTT CoP meeting a need not currently met. The teachers needed a sense of belonging, and while some (3 out of 15) found this within the school environments, others (4 out of 15) did not have the same sense of belonging or community in their school environments. When discussing professional learning communities, Tytler et al. (2011) advocate social interactions during teacher professional development as an important part of a learning community. They further suggest that teachers construct their identity in an ongoing process of interaction with and reflection on their personal and professional experiences (Tytler et al. 2011). The BITTT network showed promise in providing the sense of belonging and community to help support social interactions. Although the form of professional learning community developed in this research is still in the emergent stage it was able to help teachers overcome isolation, provide

effective professional learning and help the teachers interact with others and reflect on their experience whilst they were still engaged in their classrooms.

8.2.2 Teacher Professional Learning

The second key finding, related to teacher professional learning in isolated schools, is that the availability of teacher professional learning (TPL) is restricted by geographical conditions. Some participant teachers (5 out of 15) felt that the lack of access to TPL was a huge disadvantage for teachers in that area as the main TPL providers were not readily accessible. When TPL was delivered via video conferencing, some participants (3 out of 15) felt that the social connection was missing, and that they could just 'zone out'. Teachers felt that, in those instances, the 'value' of the TPL was diminished. When assessing the viability of professional learning models Meyers et al. (2008) found that the most successful professional learning models had an emphasis on commitment over an extended period of time with mentoring and access to expertise. In conceptualising teacher professional learning Opfer and Pedder (2001) concur, in that professional learning needs to be contextualised in complex learning environments in order to be effective. The BITTT model delivered TPL, utilised access to expertise, and provided some mentoring by the expert. Within the research timeframe and fledgling development of the BITTT model, promising indications of a blossoming CoP were

noted. By delivering the TPL together with added support from the BITTT learning community, a collaborative approach to delivering services and support to teachers in isolated communities proved to be of great benefit to the teachers.

Although the results of the research were promising, some issues did arise. One major issue arising from the participant interviews, which is also reflected in the literature, is the participation of some teachers in more than one professional learning community for different disciplines (for example: science teachers, maths teachers etc.). Therefore, some teachers were members of a number of Communities of Practice, which could become a time pressure issue, particularly in rural and remote communities where teachers have many additional responsibilities. Data from this study suggests that a combination of Communities housed together could be a possible solution. This will be discussed in the following chapter.

8.2.3 Teacher efficacy enhanced by targeted support and resources

The third key finding was that at the beginning of the study, in their initial interviews, participant teachers (9 out of 15) had mixed feelings about their own efficacy in regards to managing students with oppositional and defiant behaviours. Some (4 out of 15) struggled with balancing the needs of students with special needs with all other students. A characteristics response is presented below:

“to give him the extra support that he needs and still supporting all the other students in the room at the same time is quite difficult” (Teacher 13).

Whilst feeling confident in their abilities to manage the classroom behaviours on a day-to-day basis (eg *“I am a very strong disciplinarian, ... I separate them when they go through their little moods”*, Teacher 11), they felt insecure in their ability to provide the necessary support for the student with oppositional and defiant behaviour when they were having a defiant episode, and also still retain the integrity of their learning environment. Most participant teachers (9 out of 15) found dealing with students’ defiant behaviours stressful. This is a similar finding to the research literature for both inexperienced and experienced teachers. Hastings and Bham (2003) noted that increasing teacher efficacy positively impacted on teacher practice and reduced teacher stress. They found that increasing teacher efficacy may be achieved with an appropriate supportive structure, however, this is not always available in isolated schools.

The BITTT CoP provided a sense of support, in the form of advice and a variety of strategies that teachers could turn to when experiencing a stressful episode. All the teacher participants valued the availability of contact and the breadth of resources (eg *“I really liked to be able to talk to somebody ... even just to try something new was good”*, Teacher 4). Specifically, access to a wider, beyond one school, expertise-base was valued in the BITTT site, with a characteristic response as

follows:

“sometimes at school there are teachers around you with lots of knowledge but they might not have the information that you want, especially in a remote area, you just don't have as many pathways to get information so it's nice to have somewhere that is completely different, outside of school” (Teacher 4).

As demonstrated in phase one of the research study (McLean & Dixon, 2010), support for teachers in isolated schools is insufficient to cater for their needs, and as shown in Chapter Four, the most vulnerable group is that of beginning teachers. Similar to these findings, Moore and Chae (2007) found that beginning teachers in particular “often felt isolated in their working environment without appropriate support” (p. 220), without the additional complication of geographic isolation. In analysing teacher support needs and the use of online learning, Gebbie et al. (2012) found a direct correlation between use of an online learning community and improved teacher efficacy (p. 44), further noting that experienced teachers also benefited from participating in an online learning community.

All of the participant teachers found the input of expert practitioners available on the BITTT site to be highly valuable. The ability to have an expert in the field ‘on call’ enabled the participants to ask questions and gain practical, relevant and contextualised advice. The access to an expert also encouraged participant teachers to reflect on their practice and classroom behaviour management as they

sought to clarify questions to the expert. Reflective practices were supported by resources on the BITTT site, which provided a scaffold for the analysis of student behaviour, as well as the teacher's own behaviour and reactions and the identification of the function of behaviour. For example, during the iterative cycles (Phase Three of the research), Teacher 8 reported that she felt much more comfortable with her teaching practice after discussions and affirmation from the behaviour expert. The provision of effective support and resources led to reported improvement in teacher efficacy within the BITTT participants.

8.2.4 Teacher Time Constraints and Stress

The impact of time constraints was the fourth key finding of this study. Most of the teachers (14 out of 15), worked long hours outside the classroom (some teachers reported up to an additional 50 hours per week). Teachers commented that they *"had done 70 or 80 hours"* (Teacher 5) or *"a minimum of 30 hours outside of school"* (Teacher 3). These tasks include planning, programming, report writing, committee meetings and extra-curricular supervision, such as sporting teams, choir and band. The issue of time constraints and teacher stress was investigated by Karaj and Rapti (2013), who found significant correlations between teaching job stress and variables including the disruptive behaviour of students, time pressure, and work overload (p. 18). Teachers in isolated communities in this study found that time constraints impacted on their ability to take part in activities that may have decreased their

stress such as social and sporting pursuits.

One teacher participant left the field of teaching shortly after data collection was complete, in order to drive a truck in a local mine. When questioned over his decision he cited the long hours of work required outside the classroom as well as travelling time for courses, which was unpaid. This participant did feel well supported from the executive within the school, but struggled with the number of mandated tasks expected of him, with little or no time, or energy for investigating ways to improve his practice, like accessing the BITTT CoP for support. For this teacher, it was easier to walk away from the profession than search for additional support and modify his practices. This reiterates the findings of Karaj and Rapti (2013) that finding alternate means of supporting teachers in rural and remote communities for overwhelmed beginning teachers is an important factor in teacher retention.

The teachers were particularly aware of time constraints when they were required to travel long distances to participate in teacher professional learning. For the teachers in this study, this could entail up to a four-hour drive, which necessitated staying away from the school for up to three days. Teacher 8 stated that for a Monday course they were “*expected to give up my Sunday*” to travel, which “*I never got back*”. The extended time out of the classroom can be a particular issue when teaching students with behaviour issues such as ODD or oppositional and defiant

behaviours. McLean and Dixon (2010) reported that in isolated schools a teacher's extended absence could have dramatic implications for the students, with one such instance of two-day teacher absence at a TPL course, leading to the suspension of over half the class (More detail is provided in Chapter Four).

8.3 The BITTT Model

A practical solution to the findings outlined above, supported by this research, was to provide professional learning within the school environment, by establishing a professional learning community, or CoP. This involved active collaboration in the community to support additional learning. Teachers participating in professional learning communities (PLC) may exhibit improved teaching practice, increased collaboration and efficacy (Vescio, Ross and Adams, 2008; Mayer, 2006). In addition, Vescio et al. (2008) found that teacher participation in a PLC led to improvements in student outcomes. In the current study student outcomes were not measured, but some teacher participants (3 out of 15) reported more settled students, and an improvement in the learning environment after utilising the BITTT CoP. After applying advice from the BITTT CoP the student with oppositional and defiant behaviours was *"fitting into the class, you would walk into the classroom and not notice his behaviours standing out like they were previously"*, in fact now *"he was sitting in his seat and working for me"* (Teacher 4).

Drawing together the initial findings of how teachers can be supported in isolated schools with a professional learning site, the following model was developed to visualize the interactions and connections with theory of an effective CoP site.

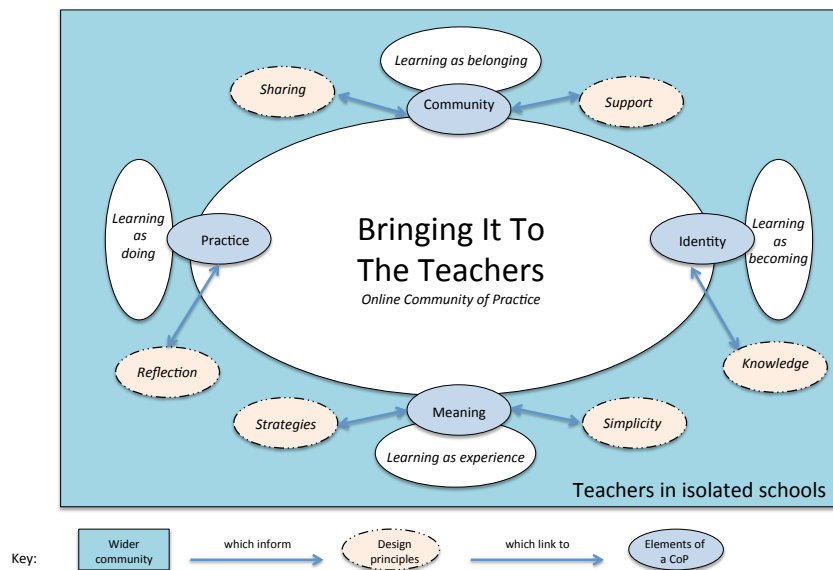


Figure 8.1: The initial BITTT model

The above model demonstrates how the initial design principles and theory worked together to support teachers in isolated schools through the BITTT site. The largest square is representative of the wider community of teachers in isolated schools, and it was in conjunction with members of this community that the draft design principles were established. The design of the online community used design principles to create a solution that evolved throughout the research period using “multiple iterations of investigation, development, testing and refinement” (McKenney & Reeves, 2012, p. 15). A Community of Practice (CoP) is defined as set

of people with a common concern or issue about topic who interact to develop knowledge in that area (Wenger, et al., 2002).

The design principles are linked to the four main elements of Wenger's (1998) CoP model; Community, Practice, Meaning and Identity.

Community. As the previous discussion demonstrated, to assist teachers to experience a sense of belonging within the CoP it was important to allow them to *share* their ideas socially within a supportive environment. It is with this sense of belonging that participants of BITTT feel that they can gain knowledge and confidence from sharing resources, strategies, ideas and stories within the Community of Practice's supportive environment. This support, both given and received allows community members to experience the sense of belonging. On-going support is one of the key elements to ensure success in TPL (Myers et al., 2008), and the BITTT model had the capacity to provide that.

Practice. Teachers improve their practice when they use reflection to learn as they go (Wenger, 1998). The BITTT model was built to provide teachers with a structure to reflect on their practice utilising the analytical resources provided on the site and to share their own practical experiences with others. The fact that all the participants were currently employed teachers who shared a similar practice of daily work with students with oppositional and defiant behaviours was essential for

making the BITTT model work.

Identity. It is important for teachers in the CoP to have an individual identity (Wenger, 1998), and links to the development of their professional identity. The provision of knowledge and shared experiences also helped teachers to develop their professional identity.

Meaning. And finally, for the CoP to have meaning and relevance to teachers in isolated schools, participants must have easy access to *information* that is practical, easy and time effective to implement. Most of the professional learning that isolated teachers participated in previously, had little or no ongoing support. The information was provided as the resources and strategies provided on the BITTT site, which provided teachers with authentic ideas they could implement in their classrooms.

These design principles, their method of development and their connection with the elements of a CoP will be further discussed in the next section by using the research questions as a frame.

8.4 The research questions

The aim of this research study was to produce and refine a theoretically sound method of providing professional learning and support to teachers in isolated schools of students with oppositional and defiant behaviours. This study explored the unique and complex context in which these teachers work and how their professional learning and support needs can be met in an innovative way.

The research questions were the main focus of this study and are addressed in detail below.

8.4.1 Question 1: What are the key issues in professional learning for teachers of students with oppositional and defiant behaviours that need to be addressed in an online learning environment?

In answering the first research question this study sought to investigate the needs of teachers in isolated schools, more specifically - teachers who had difficulties with teaching students with oppositional and defiant behaviours in these schools. This study used an extensive literature review as well as previous research in the first phase of this project. Furthermore, experts in the area of behaviour disorders and behaviour management were used in a focus group to garner their expertise in the

most appropriate way to deal with students with oppositional and defiant behaviours in a mainstream classroom. Participant teachers were also interviewed to ensure that their views were aligned with that of the pilot research.

Phase One data (McLean & Dixon 2010) and initial participant interviews, were thematically analysed to highlight teacher needs. These were then crosschecked with current literature and focus group responses to identify preliminary guiding design principles. Some of the areas that were highlighted as the most significant were: an understanding of the disorder and associated behaviours; and new ideas and practical strategies for use with students with oppositional and defiant behaviours. Teacher participants emphasised the need for more than just strategies and information. They also highlighted an element of emotional support and mentoring, empathetic support from colleagues with shared experiences, a sense of community, and the need to take into consideration their considerable workload. Teachers required a time effective method of finding solutions to their problems, so they were eager for a solution that would not add extra burden to their workload.

These identified themes were refined in relation to literature, theory and expert opinion and were used to develop the initial design principles for the development of the BITTT website. These initial principles were:

1. *Knowledge*, skills and understanding required by teachers of students with the disorder (ODD)

The majority of teachers (8 out of 15) expressed concern that they had only a basic understanding of oppositional and defiant behaviours and ability to deal with these behaviours when presented in class. The teachers stated that understanding why students behaved in the way they did, would enable them to better meet the needs of those students and the class as a whole. The research of Salend and Sylvestre (2005) suggested that teachers need to gain a greater knowledge of oppositional and defiant behaviours in order to be able to employ individualised strategies to promote learning and positive behaviour. This aligns with the behaviour experts' opinion about dealing with students with behaviour disorders. The expert focus group strongly suggested that having a theoretical understanding of behaviour and behaviour disorders would allow teachers to meet student needs in a more holistic manner.

2. *Strategies*: a range of strategies for working with students with ODD and behaviour issues

Participant teachers (9 out of 15) in this study discussed in the initial interviews that they used a small variety of strategies for dealing with oppositional and defiant behaviour. These strategies were obtained from discussions with colleagues and

attendance at teacher professional learning (TPL). In schools with a small staff, this is problematic because there are so few colleagues from whom to gain ideas. Another issue is the dynamics of the staff in isolated schools. Teachers in isolated schools tend to be either transient, only staying for a few years, or long-term, spending the majority of their teaching career in one school. If the TPL program in that school is poorly organised or underfunded, there could be a serious gap between teacher knowledge and best practice. Teachers in this study specified a need for a series of recommended new strategies, proven to be successful for others, to trial in their classrooms.

3. *Support*: empathetic support from colleagues

All the teachers suggested that they would benefit from greater support. This could be problematic in an isolated school which has a sole teacher, or only a few teachers. Different participants indicated a variety of learning styles. Some preferred to learn via reading and discovering the answers in text (Teachers 6, 7 & 9); others preferred a more interactive and verbal style of learning such as professional discussions (Teachers 2, 4, 8, 10 & 13).

In isolated schools some TPL was delivered via videoconferencing with a one way communication of knowledge. It was noted that some teachers (7 out of 15) felt they gained more from professional learning when it was delivered face-to-face whereupon they could ask questions and clarify their understanding, or with on-

going support and participation in related activities, they could solidify knowledge. They felt it was easy to lose concentration during a videoconference and did not feel that they gained the same level of benefit from this method.

4. *Sharing*: contributing to the knowledge of others

Teacher participants felt that specific teaching strategies which had proven effective in comparable circumstances would be the most important aspect of the site. They voiced their opinions that teaching students with oppositional and defiant behaviours can be problematic. Most teachers (12 out of 15) felt teaching strategies with a proven track record would be the most important. Finding out what worked for other teachers with similar students would cut down the trial and error process they would otherwise experience. Teachers (6 out of 15) also expressed a desire to help other teachers in isolated schools by sharing effective strategies, as well as gaining knowledge through the successes of others. This collaborative sharing of knowledge utilised their learning to its best advantage. Sharing and supporting other members of the community aided in fostering a sense of belonging within the group members, providing social and emotional support that some members were missing in their school environment.

5. *Reflection*: strategies for reflection on practice and causation

Reflection on the triggers of oppositional and defiant behaviours in the classroom assisted teachers in contemplating the effectiveness of their teaching practice (McLean, 2008). The use of a reflective diary gave teachers the impetus to look at their practice from an external perspective, allowing them to analyse effectiveness, particularly in relation to an analysis of the function of the oppositional and defiant behaviours demonstrated by the students in their class (McLean & Dixon, 2010).

6. *Simplicity*: an easy to navigate site with clear structure and information and easy links to information.

With heavy time pressures placed on teachers, a strong focus was placed on reducing teacher workload, by ensuring that participating in the study and using the site did not add to this workload. Teachers required information that was easy to access, so that they didn't have to go searching for it. All participant teachers indicated that time pressures impacted their ability to source relevant information effectively. For example "I have been to executives and asked for help... they don't really have the time to help. It is very frustrating" stated Teacher 2. It would be more effective if "information is all together so you don't have to look for it, so it is easy" (Teacher 4), and "it would be better if you just have them all at one spot" (Teacher 6). This could reduce the time pressures experienced by teachers in isolated schools.

8.4.1 Question 2: What is the role of social interactions in supporting the participants of an online learning environment?

The finding that teachers in isolated areas of New South Wales have expressed a need for the same collegial support as their metropolitan counterparts (Kelly et al., 2014) merits the examination of the social interactions which are available, and those that need to be available to these teachers. The collegial support available in these schools, is often delivered via video conferencing or teleconferencing. While teachers in metropolitan schools often have a large staff with whom to network, or colleagues from other schools close by with whom they can forge collegial bonds, teachers at isolated schools often only have a limited number of staff with whom they can collaborate. Kelly et al. (2014) highlighted this fact in a study of beginning teacher support, with their participants stating that they had “no mentor”, or one who was ineffective “her workload was such that there was little time to effectively help. Sink or swim!” (p. 75).

Networks of isolated schools often cover vast areas, so collegial bonds are difficult to build and maintain. Bonds forged at regional functions suffer due to the difficulty in maintaining these relationships (Teacher 4). Some of the participants (6 out of 10) in the BITTT CoP made social connections with other teachers of students with oppositional and defiant behaviours and shared their experiences online. This is

demonstrated by the following comment: “I like to share what I know too I recently started talking to a young teacher I think that she looks at me as someone who can help her. Because now I'm the one with more experience!” (Teacher 4). The teachers utilised these social interactions and exchanges to build their knowledge in the sociocultural context of the online community.

Previous research found that teachers in isolated settings would often turn to teachers from outside of their own school context (Moore & Chae, 2007). The BITTT community would be one such place that teachers in isolated schools could turn to for support and find colleagues with similar shared experiences. The participants expressed a willingness to support the teachers who asked questions on the site, responding when they had applicable answers. Some examples of teachers sharing experiences were: “I have used something similar in an ES1 class and found it worked really well” (Teacher 3) and “the child must be feeling like a failure for some reason, it may be an illogical reaction, but maybe it is real to him. I think if you could find some way for him to achieve success in Maths, so that he will at least give it a go” (Teacher 2). This support for fellow community members can be seen as a demonstration of the underlying activity theory in place, in that the teachers are utilizing the website and CoP as a tool to achieve the object, or objective, of professional learning through social construction of knowledge (See Figure 2.1 on p.36).

Social interactions were made with the Behaviour expert, with an ongoing conversation about the effectiveness of the advice given and progress made. However, some community members were reticent to be the ones asking the questions themselves in such a small community. Some participants (3 out of 10) explained that they would be much more likely to ask questions if there was a bigger group of participants, stating they would “rather be part of the online crowd than a pioneer” (the first to ask a question or make comment) (Teacher 8). One participant (Teacher 8), did post some questions on the site, but explained that, in her opinion, the questions would be more truthful or in-depth if they could be posted anonymously. She referred to fear of ridicule, and the possibility that people might be using her lack of knowledge against her, as restricting her confidence in asking questions. This participant felt that an ideal scenario would be the ability to post questions without anybody knowing who posted it. In this way the questions could be answered, but the threat of ‘being mocked’, and others using it against her would be diminished. This can be equated to the tensions seen in the Activity Theory Model (Figure 2.1, p. 36). These tensions play a role in what Engeström (1998) refers to as the division of labour. In attempting to mediate for these tensions within the BITTT community, it was difficult to achieve anonymity, due to the nature and context of the study and the small number of participants. This led to the incorporation of a capacity to post a question via the moderator, which allowed for a degree of anonymity in the final iteration of the BITTT site.

This study found that the BITTT CoP was indeed a fledgling source of social interaction, and the social construction of knowledge, for these teachers, one which would have become more effective with a greater number of participants. Social relationships were forged between community members, with interactions between them increasing, particularly when discussing expert advice. The collaborative sharing of knowledge about effective strategies was perceived as a definite strength of the BITTT CoP (Teachers 2, 3 4 & 8). Two examples of the comments were:

“what I got out of which is some support, and ideas from the teachers who are dealing with the same kind of kids, because is not very often that you come across a student with those oppositional behaviours” (Teacher 3) and “I really liked to be able to talk to somebody about anything, because even just to try something new with good because it was better than worrying about it myself and sometimes at school there are teachers around you with lots of knowledge but they might not have the information that you want, especially at in a remote area you don't have just as many pathways to get information so it's nice to have somewhere that completely different, outside of school” (Teacher 4).

The willingness to improve social interaction and connections between teachers in isolated schools was appreciated as a positive step that could be further improved upon with a more extensive CoP.

8.4.2 Question 3: What are significant design principles for an online learning environment for teachers of students with oppositional behaviour in isolated schools?

The initial guiding design principles were used to develop an online learning environment for teachers in isolated schools of students with oppositional behaviour. This online environment, entitled 'Bringing It To The Teachers' (BITTT), was developed in Edmodo. Edmodo is a Facebook style platform specifically designed for teachers and students. The BITTT site, which was used by the participant teachers to access the information provided by the experts, was aligned with the design principles.

The site was taken through four iterative cycles of use and improvement to transform it into the final model of BITTT now hosted on Drupal Gardens which is an open platform. The iterative cycles are explained in detail in Chapters Six and Seven. The eight refined design principles resulting from the study are listed below with further detail provided for each principle.

- 1. Purposeful design of the Community of Practice, with common focus and clear value for members*
- 2. Ongoing Consultation and collaboration with stakeholders*

3. *Content is contextualised*
4. *Encouraged support through commonality and relationship building*
5. *A regular rhythm of activity to encourage return to site*
6. *Have multiple perspectives*
7. *Encourage greater participation*
8. *Clear navigation*

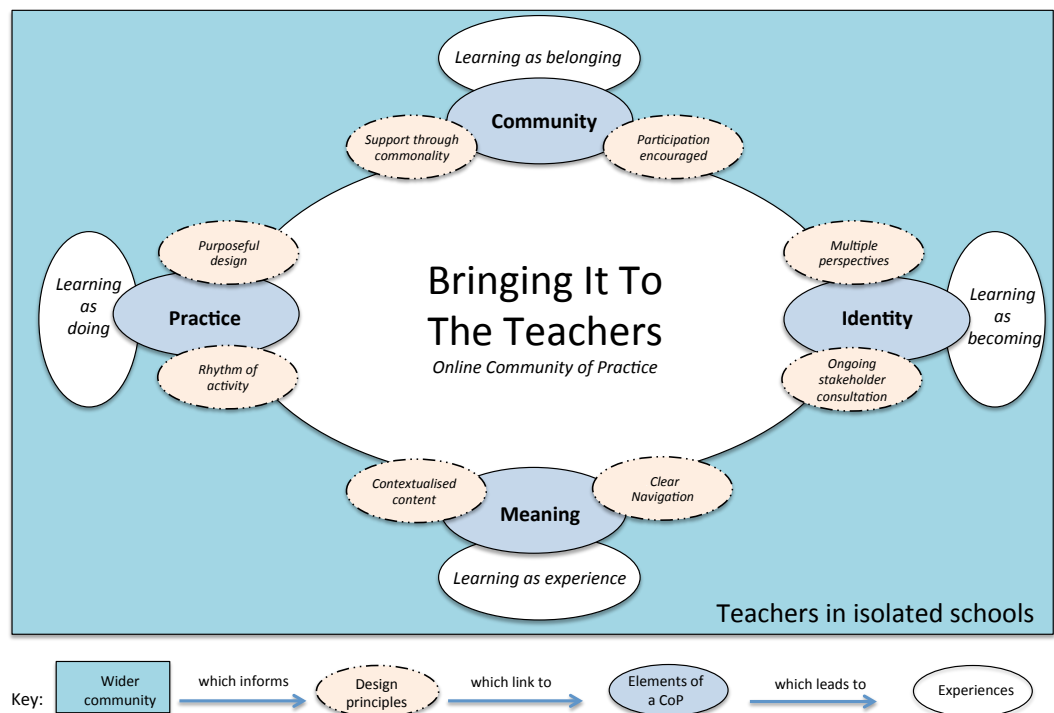


Figure 8.2 Revised Model of BITTT CoP

The refined design principles are derived from the initial design principles, informed by Phase One of research, and developed through the iterative cycles in phase three of this research. A refined model (Figure 8.2), developed throughout the research

process, and in consultation with peers, demonstrates how these elements fit together. Each principle is detailed below.

1. Purposeful design of the Community of Practice, with common focus and clear value for members

The purposeful design of the CoP needs to be supported by research, using valid design principles to ensure it meets the needs of the community. The value and benefit to participants of being members of the community needs to be clear. This design principle was implicitly adopted from phase one of the research and was demonstrated by the support of empirical research. Stakeholder collaboration and consultation in all phases of the research informed the design. Participants in this study spent considerable time outside of teaching hours working on mandated tasks, resource management and creation and efforts to improve learning outcomes for their students. One of the main barriers to participation in the online learning environment was identified as time pressure. Teachers felt their time was precious and they valued measures that were time efficient. Participants wanted to be explicitly assured of the value of belonging to the CoP from the outset. The value was demonstrated to the teachers by providing a time efficient method of locating research, strategies, resources and expert advice on dealing with students with oppositional and defiant behaviours.

This design principle was implicitly part of the initial design. However, it is also important to explicitly include this principle from the start. Peterson (2009) suggests that a virtual CoP should “provide a clear frame of purpose for the community” and “make clear the immediate value of membership in the community” (p. 107). Further Wang and Hannafin (2005) state the importance of supporting the CoP “design with research from the outset” (p. 15). The implementation of this principle allowed teachers to improve *practice* by providing a relevant and research supported learning environment that meets best practice, which in turn leads to teachers learning on the job. In the BITTT Model the purposeful design is linked to teachers’ practice, which combines with the rhythm of activity within the CoP and encourages ‘learning by doing’.

2. Ongoing consultation and collaboration with stakeholders

Stakeholders were consulted during all phases of the research, with interviews, expert focus groups, questionnaires and member checking. This collaboration and consultation continued throughout the iterative cycles, utilising stakeholder reflection on current practices to inform requirements. Wenger et al. (2002) suggest that achieving stakeholder alignments can overcome “differences in geography”, with time and effort in a geographically distributed CoP (p. 124). Involving the potential community in the initial design phase Peterson (2009) revealed that members “felt more ownership of the community” (p. 320).

Supporting this finding Wang and Hannifin (2005) presented the importance of close collaboration with stakeholders and that they should be “co-constructors of the design” (p.17). The BITTT participants felt that it was this kind of connection to the inception, and input into the direction of the learning space that provided a sense of belonging. This was important to them as it would enable them to connect with other teachers of students with oppositional and defiant behaviours. Most of the participant teachers were inexperienced and thus their professional identity was still developing. Having access to additional support, in this identity development stage would assist teachers to refine management techniques and improve self-efficacy.

Continuing collaboration over the life of the CoP allowed teachers to shape the network in line with the changing demands of rural education. Some rural localities in NSW have transient populations, with one participant having a student leave for eight months (when the father relocated for work) then return. This teacher (Teacher 4) had difficulty managing this student’s oppositional and defiant behaviours, which were under control before he left, but regressed significantly during his absence. During this transition time Teacher Four utilised the advice of the behaviour expert to assist with the disruptive behaviours.

The design and maintenance of the BITTT model were conducted in close collaboration with the community members at every stage of the research in order

to achieve stakeholder alignment. This alignment with the community needs to assist community members to build their *identity* through professional growth and becoming a member of a cohesive CoP.

3. Content is contextualised

In contextualising the content for the BITTT site, consultation with a focus group of behavioural experts, as well as an extensive literature review informed the content provided. This was further supported by information from initial interviews, and modified as required throughout the iterative cycles (see article: chapter 6). The importance of contextualising the content of a CoP is empirically supported by Collins, Joseph and Bielaczyc (2004), who emphasise that learning communities should provide “deep content knowledge” (p. 27). Wang and Hannafin (2005) suggest that contextual influences need to be documented within the design principles, whereas Hung and Chen (2001) promote the contextualising of activities within the CoP as fostering “situatedness” (p. 10). In more simplistic terms Eady (2010) considers utilising “relevant content” (p. 265) as a key design principle. The BITTT model utilised ‘relevant content’ from the outset, with the draft principles of *knowledge* and *strategies*. Both of these draft design principles relied heavily on contextualised content supported by research. Further, it drew on the extensive practical and theoretical knowledge of best practice from the perspective of the behavioural experts, which allowed the content to contain very relevant learning

experiences. This provided great *meaning* for members.

The contextualisation of knowledge is highly important to teachers in isolated schools. Many of the resources normally provided are targeted at teachers in urban schools, which in some circumstances are not appropriate for teachers in isolated schools. Content that connects to the specific demands of teaching in an isolated setting and meeting the needs of students with oppositional and defiant behaviours is of the upmost importance for these teachers. Teacher 7 suggested he would like *“An easy access point, sort of like a one-stop shop if you like, where you can go and look for strategies and support and other things that people have used and found successful”*. This allows for the meaning to be created with the utilisation of the relevant content, in this case the strategies, resources and advice. This is validated in the above model, with the contextualised content facilitating meaning making by teachers learning by experiencing.

4. Encouraged support through commonality and relationship building

Relationship building on the site was an important part of phase two, three and four, and involved both sharing and support within the BITTT community. Teachers shared their ideas for strategies and resources that they found worked well with students with oppositional behaviours and also supported one another in a social manner on the site. Relationships were developed in a very cursory manner. There

is potential for this to be further developed with time and an increased number of users. Hung and Chen (2001) suggest “commonality” can be “fostered by shared interests” (p. 10). Barnett, Jones, Bennett, Iverson and Bonney (2012) also propose that an online CoP should “promote a supportive and positive culture that is both safe for members, and encouraging of participation” (p. 10). This type of supportive culture was fostered within the BITTT CoP with participants sharing problems and solutions and supporting other members on their quest for effective teaching strategies.

One important aspect of encouraging support was to inspire participation and return to the online learning environment, which increases opportunities for social interactions. These opportunities are sometimes scarce for teachers in isolated schools, with one participant teacher having little or no social interaction outside of school, except for family (Teacher 11). When discussing the availability of professional support, Teacher Seven commented that *“there is no on-going professional support, it is kind of sink or swim You either have the ability to develop strategies or learn for yourself.... You don’t actually get any professional development”*. Another participant felt there were no colleagues at the school, or in the town, that she could turn to for advice (Teacher 13). The supportive culture helped to foster a sense of ‘community’, which led to members learning as belonging, as demonstrated in the BITTT model above.

5. A regular rhythm of activity to encourage return to site

A rhythm of activity was developed throughout the iterative cycles of improvement, through facilitator interaction. This involves the facilitator posting questions and highlighting a new resource or strategy each week to encourage participants to return to the site. This included video-based resources, that were created to fill the void in available resources. Participants suggested that video-based resources might be an efficient use of their time, if best practice scenarios were included. The 'ask the expert' facility also provided a rhythm of activity. Initially, participants were able to post questions at any time and those questions were answered within 24 hours. In the final iterative cycle this was modified so that the expert was available online for one hour at a specific time each week.

The participants were also still able to post questions at any time, and those were answered as they appeared. Wenger et al. (2002) suggests that in distributed communities, as the community members are less visible and not local, it is important to "build a rhythm strong enough to maintain community visibility" (p. 128). Peterson (2009), further suggested that the building of a "rhythm of activity with regular events" will assist in "maintaining group cohesion" (p. 143). This connects with the previous principle of providing support through relationship building, as providing a rhythm of activity allows more opportunities for online social interaction for the participants. The BITTT site effectively used this regular

rhythm to keep members returning, on average once a fortnight, although some were more regular, which ultimately assisted teachers to improve practice by accessing new strategies.

6. Have multiple perspectives

From the outset, this research involved multiple perspectives, including that of teachers, behavioural experts and researchers. Having multiple perspectives of support and strategies was included from the initial development of the site and continued in all four phases of the research. This involved the initial consultation, previous research, an expert focus group, and an expert guest. Having multiple perspectives on behaviour management and teacher professional learning allowed the teachers in isolated schools to receive the support that they need without long absences from the classroom. This is supported by literature suggesting that varying expertise is valuable for fostering an online community (Hung & Chen, 2001; Collins et al., 2004). Collins et al. (2004) explains the strength of the variety of expertise in the community of learners through the notion of “distributed expertise” (p. 27) which becomes a shared resource available to each individual participant to draw upon as the need arises.

The initial draft principles of support and provision of strategies were valuable to teacher members of the BITTT community, but needed to be expanded to a wider

range of expertise. A range of strategies with a proven track record, that can easily be trialled in their own classroom, was viewed as an important aspect of the BITTT site, which allowed teachers to learn *in situ* and gain support when needed. Modification of the multiple perspectives from a purely development phase, to formation of an integral part of the CoP, was an important step in the development of the BITTT CoP, and the BITTT model. The inclusion of the expert provided support to the development of members' professional *identity* as members gained support from the expert. In the BITTT model this principle was the development of professional identity by members learning as becoming more confident teachers.

7. Encourage wider participation

In order to encourage a greater level of participation on the BITTT site, it needs to be publicised to isolated communities, which was implicitly done within the initial setup period of a CoP. Increased marketing and promotion of the community would have seen greater levels of participation. Peterson (2009) suggests the marketing of a website within a community can lead to achieving "desired membership numbers and levels of participation" (p. 143). Further, Eady (2010) advocates the importance of opportunities for participation, and that these should be promoted within the community, to foster a sense of *community*. Hence, it is recommended that the BITTT CoP would be marketed to all teachers in isolated schools, although this was not applicable during the research phase.

8. Clear navigation

Navigation for this site needed to be simple with easy links to relevant resources and materials - the principle with which all participants eagerly agreed. The site needed to have a consistent layout and clear navigation to “support effective design of web-based instruction” (Swan, 2002, p. 24). Clear navigation and ease of use encouraged participants to return on a regular basis. This ensured that participation in the BITTT CoP did not add to the workload of teachers in isolated schools as teachers found time constraints would otherwise be a major barrier to participation. Without clear navigation the members would struggle to locate resources and the *meaning* and experiences of the site would be lost.

8.5 Conclusion

There were three main elements to the BITTT project: the BITTT site (a website housing the online learning environment); the BITTT CoP (the members of the BITTT community) and the BITTT model (which explains the connection of all of these elements). The BITTT online learning environment and CoP were developed as a major practical outcome of this study. The BITTT model and the underlying major

design principles contribute theoretically to the knowledge in the field of professional learning for teachers in isolated schools.

The research questions of this study focused on the key knowledge areas that teachers in isolated schools of students with oppositional and defiant behaviours need, the role social interactions play in supporting them and the design principles for an online learning environment and CoP. This led to the development of the BITTT site and the relevant design principles that can be used to develop a similar online environment for a distributed CoP in isolated Australia. Through the iterative cycles of the design-based research process the initial draft design principles were modified to present the final design principles. The recommendations for the use of these principles will be discussed in the following chapter. Similarly the BITTT model was transformed during the research process from the initial model (Figure 8.1) to arrive at the final model (Figure 8.2).

In this study teachers found the strategies and resources very helpful, and commented on the convenience of not having to search for strategies. They found the highlighting of a new strategy each week of assistance, when they could quickly see the latest additions to the site. The provision of the 'ask the expert' feature drew a series of interesting questions from the participant teachers. These questions and their corresponding answers were posted on the main chat space, which allowed other participants to benefit from reading the questions and

responses, and gave them the opportunity to comment or clarify as required. Many participants commented on the depth of response from the expert, and how it helped them to refine their practice.

Teachers in this study identified that their need for professional learning was not previously being satisfactorily met. TPL was available, but mainly at the large country centres, which took teachers away from the classroom for extended periods of time. Further travel to and from these TPL courses was also dependant on the teachers' own time and transport. This, along with other factors of isolation, hindered their ability to effectively develop a professional identity and strong self-efficacy. Teacher participants felt that they needed support, particularly in terms of students' oppositional and defiant behaviours, and that this support was in some cases not readily available. The BITTT CoP was developed to assist in meeting some of these needs with the provision of mentoring and professional advice, as well as the capacity to deliver and support TPL in the school environment.

Stakeholder consultation was key to the development of the initial design principles of the BITTT CoP, along with previous research, a literature review, community consultation, participant interviews and a focus group of behaviour experts. The initial design principles included:-

1. *Knowledge*: skills and understanding required by teachers of students with the disorder (ODD)

2. *Strategies*: a range of strategies for working with students with ODD and behaviour issues
3. *Support*: empathetic support from colleagues
4. *Sharing*: contributing to the knowledge of others
5. *Reflection*: strategies for reflection on practice and causation
6. *Simplicity*: an easy to navigate site with clear structure and information and easy links to information.

These principles linked to the four main elements of a Wenger's (1998) CoP model, Meaning, Identity, Practice and Community.

The initial site was developed in a 'Facebook' style platform dedicated to teachers and students, which has a chat stream as the major focus of the site. Through the iterative cycles of improvement the site was modified to a more open website design with the resources, rather than the chat as the main focus. This allowed for a more balanced site for members with varying learning styles. The cycles of improvement throughout the research period led to the refinement of the BITTT Model and design principles. The final design principles are:

1. *Purposeful design of the Community of Practice, with common focus and clear value for members*
2. *Ongoing Consultation and collaboration with stakeholders*
3. *Content is contextualised*
4. *Encouraged support through commonality and relationship building*

5. *A regular rhythm of activity to encourage return to site*
6. *Have multiple perspectives*
7. *Encourage greater participation*
8. *Clear navigation*

The feedback from the BITTT members was that the modified design was helpful in accessing strategies and resources for the management of students with oppositional and defiant behaviours, and the feedback and mentoring from the behaviour expert was particularly helpful. Further research directions will be discussed in the next chapter.

Conclusion

9 CONCLUSION

This study developed an innovative online learning environment and Community of Practice for teachers in isolated schools of students with oppositional and defiant behaviours. It utilised design-based research to work with stakeholders and education professionals in a four-phase research project. These phases, described below, involved collaborating with teachers in isolated schools to identify and understand their needs, and to develop a viable solution to the lack of support faced by these teachers. The Bringing It To The Teachers (BITTT) online learning environment and Community of Practice (CoP) were refined throughout the four phases of this research to develop design principles and to complement the theoretical model.

Phase One was a needs analysis that involved the identification of the problems faced by teachers in isolated schools of students with oppositional and defiant behaviours, and which focused on teacher professional learning and methods of support. This phase of the research involved the analysis of data collected as part of a preliminary study, an extensive literature review, participant interviews and interviews with four experts on teaching students with behaviour disorders. In keeping with the design-based research paradigm this phase of the research identified the practical problems that needed to be addressed. The major finding of

phase one of the research, was that support for teachers in isolated schools was lacking, and that an alternative method of providing support needed to be investigated.

Analysis of the data identified the need for teachers to receive more extensive support within the school environment, eliminating the need for extended periods of travel time and consequently absence from the school. Teachers identified that an online learning environment, with access to experts in behaviour management would be an effective means of receiving the required support without necessitating leaving the school. A focus group of behavioural experts was consulted to identify best practice strategies and procedures to assist teachers in isolated schools to manage student behaviours with the extensive additional needs of students with oppositional and defiant behaviours. Further examination of current literature supported and shaped the findings of Phase One, which informed Phase Two of the research.

Phase Two comprised the development of the solution, which involved the creation of the online learning environment (the BITTT site), testing and refinement of the solution and member checking. Utilising the data from Phase One, along with consultation with technology experts from the NSW Department of Education and Communities, Rural and Distant Education office, the online learning environment was developed. This resulted in the first completed version of the BITTT site in

Edmodo, which was piloted with selected isolated teachers. The participants then began accessing the online learning environment in an authentic context. The major finding of Phase Two of the research was development of the initial BITTT site, which was then tested in Phase Three.

Phase Three was the formative evaluation stage, which involved participants testing and evaluating the BITTT site in context. This informed the iterative cycles of refinement of the solution, along with stakeholder collaboration and data analysis. Participants used the online learning environment to gain access to strategies and information to assist them in managing the behaviours and challenges that arose in teaching students with oppositional and defiant behaviours. Participants evaluated the site periodically with online questionnaires, identifying the most useful sections, as well as those that needed improvement. The results of these questionnaires were analysed and formed the basis of the iterative cycles of refinement for the BITTT site. Phase Three also involved the development of the BITTT Community of Practice (CoP), which was a distributed CoP, meeting and communicating only through the online learning environment. Observations of participant interactions provided further rich data to support the findings of the iterative cycles and inform the development of the BITTT Model. The culmination of this phase, after the iterative cycles, was the production of the final version of the BITTT online learning environment, which is housed in an open forum on Drupal Gardens.

Phase Four of the research was the effectiveness evaluation, which involved the final face-to-face interviews with the participants. Participant perceptions of the effectiveness of the online learning environment, as well as a CoP were discussed in great detail, which allowed for a clear picture of the online learning environment's capacity to meet the needs of teachers in isolated schools. Data were analysed and compared to current research to facilitate the creation of design principles to be used for a similar online learning environment and a distributed CoP for isolated teachers.

In summary the major findings of this study included:

- 1) A clear need for additional support for teachers in isolated schools.
- 2) Participation in the BITTT CoP allowed teachers in isolated schools to begin to gain a sense of belonging via shared experiences with other community members.
- 3) An opportunity to develop a more sophisticated professional identity.

Overall the BITTT site and CoP, while nascent in their development, showed promising signs of being able to meet the needs of teachers in isolated schools. Areas of particular need were: a clearer understanding of student behaviour, particularly oppositional and defiant behaviour; the causes and reasons behind the behaviours; and strategies for effectively meeting these students' needs. In addition, teachers identified the need for mentoring and support for their own experiences whilst dealing with these students.

This research has argued that the BITTT site and CoP were necessary to support teachers in isolated schools, particularly those teachers struggling to deal with students' oppositional and defiant behaviours. In future this intervention could be broadened to support all teachers in isolated schools. It has demonstrated the necessity for this kind of support for teachers in isolated schools, as teachers are isolated not only in geographical terms but also in regards to opportunities for TPL, professional identity development and professional networking.

With the large number of beginning teachers in NSW starting their careers in rural areas, it is important to provide these teachers with sufficient support to foster collegial bonds with experienced mentors and other educational professionals. These bonds are difficult to build and maintain in isolated or rural and remote schools. There is a clear need for alternative methods of forging and maintaining collegial relationships.

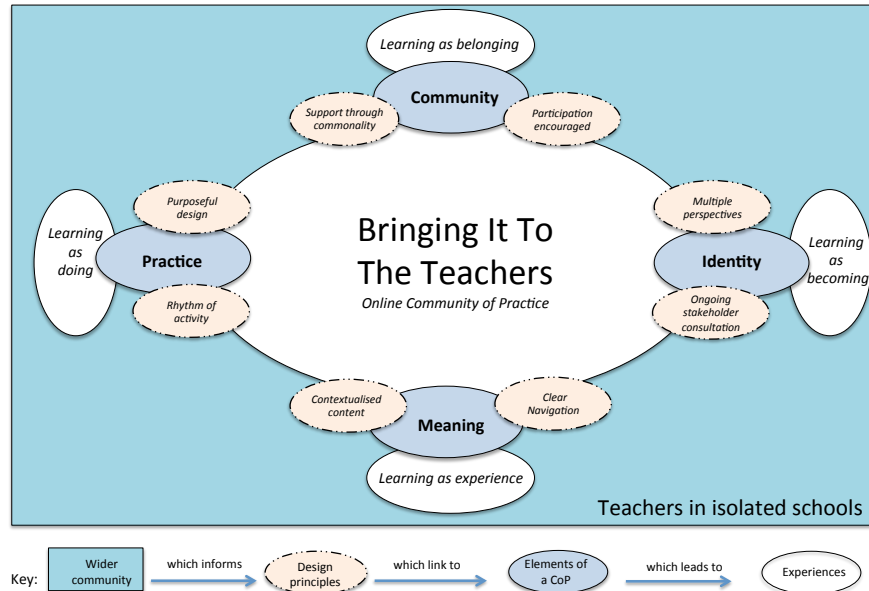
Teachers in isolated schools are entitled to equitable support, which they are not presently receiving. The intervention described in this study will help to ameliorate the effects of isolation for teachers in these schools.

9.1 Contribution to knowledge

In developing design principles, and a model based on this study, the following contribution to knowledge has been made:

Firstly, this study examined and interpreted the needs of teachers in isolated schools of students with oppositional and defiant behaviours, from the teachers' perspective. Teachers were interviewed to understand the pressures that they face and the means by which they are supported, both within the classroom, in their teaching practice and in their emotional needs. The teachers' perceptions were then examined and critically analysed to identify ways and means with potential to meet these needs.

Secondly, this study offers a conceptualised model of how sociocultural theories interact with the combination of the elements of a disbursed CoP and the design principles for the BITTT community. The diagram of the model (below) shows the BITTT CoP design principles, as they relate to the CoP framework designed by Wenger et al. (2002). This also reveals the sociocultural interactions of the tool (site/CoP), subject (members) and object (learning). The learning experience illustrated below is experienced through an individual's interactions with the CoP members and the site.



9.2 Limitations

This research was qualitative but not quantitative as the participant group was limited in size. Expanding this research to cover more isolated areas of NSW and using quantitative methods, could offer further insight into the breadth of the problems facing isolated teachers. The main limitation of this research is that the participant group was small for a CoP, with only ten of the participants utilising the CoP and BITTT site. The potential for this format of support is emergent with the BITTT community demonstrating significant signs that, with appropriate promotion, it would be found to be a valuable tool for teachers in isolated schools.

The research project commenced midway through the year and extended into the next academic year, with some teachers having a different cohort of students in the final phase of the research. This meant that some teachers required a different level of support in the closing stages of the research project. Future research should maintain the community over a full school year, or longer, in order to track the improvements of the target students.

9.3 Future research

Wider research into the effectiveness of support systems for all teachers in isolated schools could examine retention rates for beginning teachers, in relation to support, or lack thereof, and the delivery of professional learning to isolated teachers. Whilst in this study the fledging community demonstrated signs of participant collaborations, a wider scope, including the most isolated teachers, and a greater number of participants, would allow for the Community of Practice to further develop and provide even greater support to teachers in isolated schools. An interesting area of further investigation would be a comparative study on single and multiple participants in online professional learning CoP, investigating the differences in participation rates and the impact this professional isolation has on their teaching practice. The direct impact on students of teachers participating in

online communities could be another area of future research, creating a measure of the impact teacher participation and modification of teaching practice and the academic and social advantages to students.

The DEC needs to implement a state wide CoP, for teachers in isolated schools, supported by an online learning environment which is supported by real-time access to experts. Furthermore, such an online learning environment should house number of subgroups, to cater for differing needs (e.g. Students with behaviour disorders). This would allow for the effective start-up and growth of a cohesive CoP for teachers in isolated schools. These CoPs could utilise the BITTT model and design principles outlined in this research to deliver this essential service.

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APPENDICES

Appendix 1 Participant Information Sheet

University of Wollongong



PARTICIPATION INFORMATION SHEET FOR TEACHERS

TITLE: Bringing it to the Teachers: Meeting the Professional Development needs of teachers in isolated schools of students with Oppositional Defiant Disorder.

PURPOSE OF THE RESEARCH

This is an invitation to participate in a study conducted by researchers at the University of Wollongong. The purpose of the research is to investigate the professional development issues and challenges facing teachers of students with diagnosed Oppositional Defiant Disorder (ODD) in isolated schools and meet those PD needs with an online PD learning environment. The study also wishes to trial the effectiveness of the online PD learning environment, which contains resources, programs and strategies relevant to teaching students with ODD which would assist in the management of these students.

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METHOD AND DEMANDS ON PARTICIPANTS

If you choose to be included, you will be asked to participate in two interviews, use the online professional development learning environment and report on the effectiveness and usability. Participants in the research will be asked to complete a brief daily journal one week prior to

the initial interview, to identify the issues and challenges that face you as a teacher of students with ODD. The researcher will visit to conduct a 40-minute interview that will be audio-taped to ascertain your professional development needs and any areas of concern including types of additional programs and strategies required. The journal will assist you in clarifying your daily classroom demands. Typical questions in the interview include: Where do you source your information and strategies in regards to managing challenging behaviours within the classroom? How often do you source strategies or information from the internet? What aspects/ features of a website would you find most useful? Do you feel a community of practice may be beneficial? How often would you use a chat room?

The researcher will then collaborate with experts in the field to develop a solution and provide you access to the purposefully developed online PD learning environment with resources, links and chat room. Participants will be asked to use the online PD learning environment and answer the occasional questionnaire. The information from these questionnaires will be used to make iterative improvements to the online PD learning environment. The researcher will conduct a final 40-minute interview to assess the effectiveness of the online PD learning environment design.

The researcher will have no contact with students.

POSSIBLE RISKS, INCONVENIENCES AND DISCOMFORTS

Apart from the 80 minutes of your time for the interview, time to browse the online PD learning environment and the time taken to compile the journal we can foresee no risks for you. Your involvement in the study is voluntary and you may withdraw your participation from the study at any time and withdraw any data that you have provided to that point. Refusal to participate in the study will not affect your relationship with the University of Wollongong.

BENEFITS OF THE RESEARCH

This research will provide a design for the development of online assistance for teachers in isolated areas with students with ODD. Findings from the study will be published in a Doctoral Thesis at the University of Wollongong, in a report to the DET and be published in educational

journals and conferences. Confidentiality is assured, and the school, you and the students will not be identified in any part of the research.

ETHICS REVIEW AND COMPLAINTS

This study has been reviewed by the Human Research Ethics Committee (Social Science, Humanities and Behavioural Science) of the University of Wollongong. If you have any concerns or complaints regarding the way this research has been conducted, you can contact the UoW Ethics Officer on (02) 4221 4457.

Thank you for your interest in this study.

Appendix 2 Daily Reflective Journal

Daily Reflective Journal

Please record below any issues that occurred in the classroom today involving the specific student. Use the checklist as a prompt and record any details. This will help at time of interview to identify the support needs within your classroom.

Teacher ID: _____

Mon Week

| Antecedent-Behaviour-Consequence | Effect on class |
|----------------------------------|-----------------|
| • | • |
| • | • |
| • | • |
| • | • |

Tues Week

| Antecedent-Behaviour-Consequence | Effect on class |
|----------------------------------|-----------------|
| • | • |
| • | • |
| • | • |
| • | • |

Wed Week

| Antecedent-Behaviour-Consequence | Effect on class |
|----------------------------------|-----------------|
| • | • |
| • | • |
| • | • |
| • | • |

Thurs Week

| Antecedent-Behaviour-Consequence | Effect on class |
|----------------------------------|-----------------|
| • | • |
| • | • |
| • | • |
| • | • |

Fri Week

| Antecedent-Behaviour-Consequence | Effect on class |
|----------------------------------|-----------------|
| • | • |
| • | • |
| • | • |
| • | • |

Mon Week

| Antecedent-Behaviour-Consequence | Effect on class |
|----------------------------------|-----------------|
| • | • |
| • | • |
| • | • |
| • | • |

Tues Week

| Antecedent-Behaviour-Consequence | Effect on class |
|----------------------------------|-----------------|
| • | • |
| • | • |
| • | • |
| • | • |

Wed Week

| Antecedent-Behaviour-Consequence | Effect on class |
|----------------------------------|-----------------|
| • | • |
| • | • |
| • | • |
| • | • |

Thurs Week

| Antecedent-Behaviour-Consequence | Effect on class |
|----------------------------------|-----------------|
| • | • |
| • | • |
| • | • |
| • | • |

Fri Week

| Antecedent-Behaviour-Consequence | Effect on class |
|----------------------------------|-----------------|
| • | • |
| • | • |
| • | • |
| • | • |

Additional Comments:

Behaviours which cause the most concern:

Areas in which assistance would benefit the class/student/teacher:

Appendix 3 Behaviour Expert Interview Schedule



Focus Group Questions

1. What are your experiences with students with ODD?
2. Do you have any experience with working in a geographically isolated school?
3. What types of professional development do teachers of students with ODD need?
4. What do you see as the main areas of need for teachers of students with ODD?
5. How do you think they can best be supported?
6. What do you think would be the most efficient way of supporting them?
7. In your experience, what are the most effective strategies that you have found for students with ODD ?
8. What Resources do you think these teachers would find most useful?
9. What do you think are stressors on teachers in isolated schools?
10. What is the role of social interactions in supporting the teachers in isolated schools? / teachers of students with ODD?
11. Do you see social interaction with like-minded colleagues as important?
12. In an online learning environment, what aspects do you see as a necessity for teachers in isolated schools of students with ODD?

Appendix 4 Initial Interview Questions



University of Wollongong

Semi-Structured Interview Questions Initial interview

1. How long have you been teaching and in what areas?
2. Did you participate in an induction program when you started at this school? Did it include any behaviour management?
3. What are the dynamics of your class? (stage/ age/ gender/ issues)
4. Do you have any students in your class with a specific mental health diagnosis?
5. What are the advantages/disadvantages of having a student labeled with a mental health diagnosis?
6. How has this impacted on their learning?
7. How does having the student in your class effect your learning environment?
8. What effective strategies do you use to deal with this student?
9. What are the specific behaviour issues of students with ODD that need to be addressed?
10. What professional development do you receive now? Have you completed/ heard of/ been advised to do the DET online behaviour course?
11. What are your current sources of professional development /support?

(Formal/ Informal) (ISTB)

12. What would help you improve your management of the student?
13. Where do you source you information and strategies in regards to managing challenging behaviours within the classroom? How often?
14. Are you confident using the internet?
15. How often do you source strategies or information from the internet?
16. Which sites do you go to for information? Would you recommend them? Quality?
17. Would an online PD learning environment containing ODD specific programs and strategies be of benefit to you? Why?
18. What aspects/ features of an online PD learning environment would you find most useful?
19. Would sharing your ideas with like-minded people be something that you would like to try?
20. Do you feel a community of practice may be beneficial?
21. How often would you use a chat room?
22. Would you be more likely to use a chat room if you knew other teachers in isolated schools of students with ODD were there?

Appendix 5 Second Interview Schedule



University of Wollongong

Semi-Structured Interview Questions Second interview

1. Have your circumstances change since the first interview?
2. Do you still have students with oppositional behaviours?
3. Do you no longer have issues with Oppositional students?/ Have their behaviours improved?
4. Have you found additional strategies that work for you? What are they?
5. How are you currently emotionally supported?
6. When facing a problem with an oppositional student, who do you go to for support? How often, how helpful?
7. Do you debrief with colleagues?
8. How often?
9. Can you tell me why you chose not to sign up for the BITTT site?
10. What barriers were there? –PROMPTS: Time? Competing priorities? Technology? Access to technology?
11. Do you try to source new strategies from the internet or colleagues?
12. Do you network with other teachers in your school or area?
13. Do you network with teachers from other areas?

Appendix 6 Iterative cycles questionnaire

Questionnaire iterative cycles phase of research

From the homepage, is the purpose of the website clear

Clear somewhat clear unclear

The site easy to navigate around

Easy same as previous site harder

The information on each page is easily accessible

Easy same as previous site harder

The information on each page is logically set out

Easy took some searching hard

The information on each page is enough information

Too much just enough not enough

The pages are consistent

Consistent different confusing

Registration was easy

Easy same as previous site harder

Did you use the forum?

Yes No Looked but did not participate

The forum was easy to use

Yes No Looked but did not participate

I would use the forum

Yes, regularly Yes on occassion As the need arose No

I found the information provided by the expert to be helpful

Yes very Yes somewhat interesting, but not relevant to me No

I would be more likely to participate if more people were on the site

Yes Definitely Yes, more likely Not really Definitely not

I am comfortable posting a question to others

Yes, regularly Yes on occassion If I was desperate No

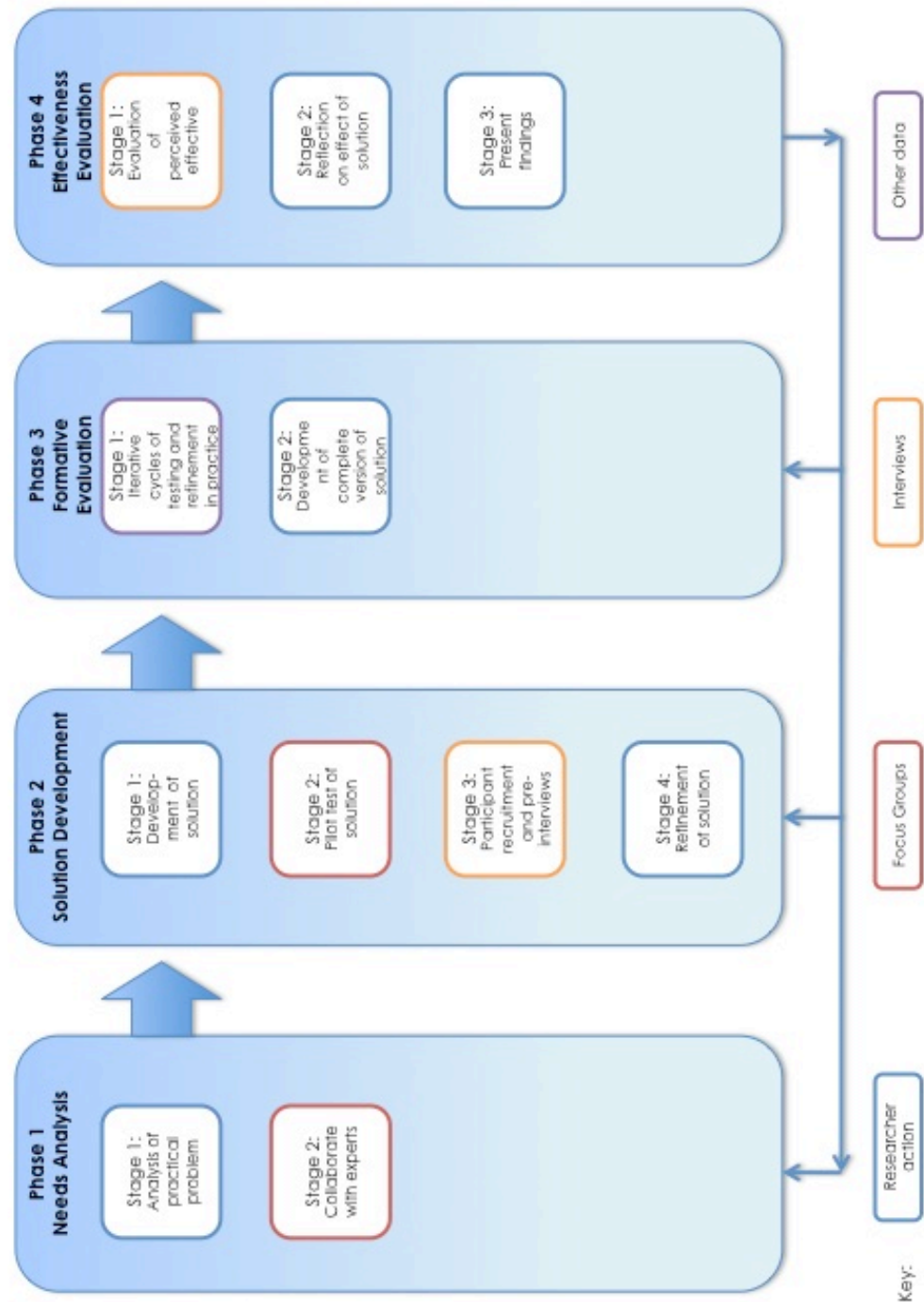
I am comfortable posting a question to the expert

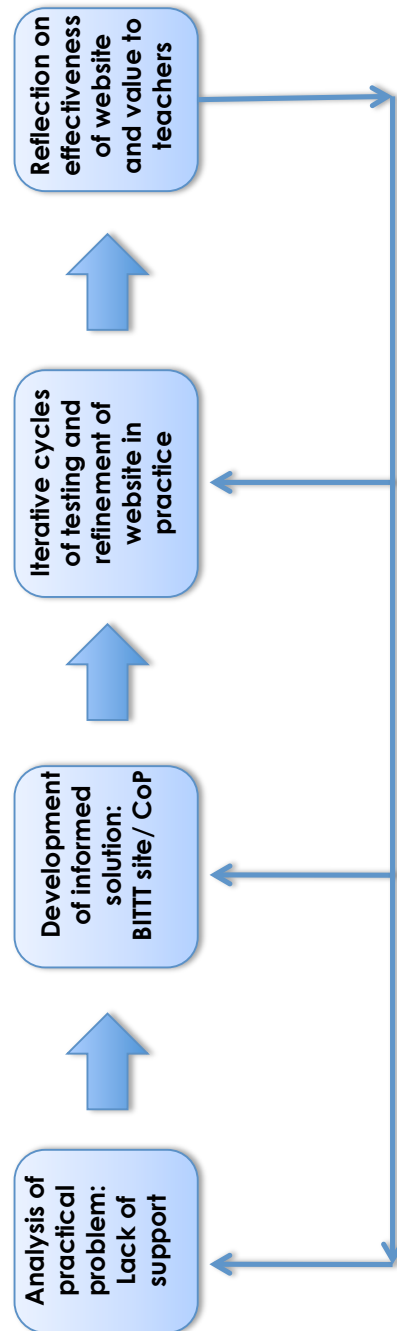
Yes, regularly Yes on occassion If I was desperate No

Compared to the BITTT EDMODO site this version was:

Easier to use about the same harder to use

Appendix 7 BITTT Phases of research





Refinement of Problems, Solutions, Methods, and Design Principles

Appendix 8 Conceptually Clustered Matrix example Experts

BITTT Conceptually Clustered Coding Matrix

| Data source | Teachers * representative quotes | | | | | Website | | | | CoP | |
|-------------|--|--|--|---|--|---|---|----------|----------|-----|--|
| | Knowledge | Skills | Stressors | Resources | Strategies | Support | TPL | Barriers | Elements | | |
| Expert 1 | <ul style="list-style-type: none"> -Understanding of disability -Teach self motivation -Teach appropriate behaviour * "really need to understand the disability... what works and what doesn't work with kids with those sorts of disorders" | <ul style="list-style-type: none"> -Ability to stay calm -Create clear explicit rules -Flexibility * "not be oppositional [and] need to step back in a confrontation and give the student time" | <ul style="list-style-type: none"> -Remain calm -Maintain consistency * "remaining calm and consistent can be really hard for new teachers" | <ul style="list-style-type: none"> -Info about ODD -Examples of rules framework & consequence system -Pro-Social * "providing a clear framework of rules that are positively stated" | <ul style="list-style-type: none"> -Provide safe environment -Structured breaks -Create a culture of success -Pro-Social Behaviour Mgmt * "good pro-social positive behaviour management is essential" | <ul style="list-style-type: none"> -Debrief with empathetic peers -FBA assistance -Professional discussions * "have professional discussions about things that we need to change" | <ul style="list-style-type: none"> -Behaviour courses * "a course in managing Behaviours I think would be very useful particularly for those teachers who don't feel confident" | | | | |
| Expert 2 | <ul style="list-style-type: none"> -Patterns of behaviour -Cognitive restructuring to change beliefs * "being aware of what patterns to recognise and what their reactions might be to those patterns" | <ul style="list-style-type: none"> -Ability to identify patterns of behaviour -Routines that provide structure -Advanced verbal skills * "realise that you have got to stay cool, calm and collected and not get emotionally involved" | <ul style="list-style-type: none"> -Consistency of approach in changing circumstances * "feeling like I haven't got the resources to deal this, I don't know what to do" | <ul style="list-style-type: none"> -IEPs & IBPs -NCI training -Behaviour presentations by experts * "have access to those sorts of resources [behaviour expert presentations]" | <ul style="list-style-type: none"> -De-personalise behaviour -Negotiate rewards -Use technology to complete work not just as reward * "we see computers as rewards instead of seeing them as core learning and that is a really significant" | <ul style="list-style-type: none"> -Discussions with like-minded colleagues * "other teachers with similar kids so you realise that you are not on your own and it is not you" | <ul style="list-style-type: none"> -NCI training -Resilience training * "the NCI training would be helpful" | | | | |
| Expert 3 | <ul style="list-style-type: none"> -Teach use of time out/ self regulation -Use case study * "I think you have got to work as if it is almost a case study" | <ul style="list-style-type: none"> Relationship w parents -Negotiate with students -Basic limit setting * "educating the parents is really the long term answer" | <ul style="list-style-type: none"> -Opposition from staff -Isolation * "isolation is a compounding issue" | <ul style="list-style-type: none"> -Solution focused intervention -Anger management programs | <ul style="list-style-type: none"> -Teach the use of time-out -Change one behaviour at a time * "Replacing the behaviours with other behaviours" | <ul style="list-style-type: none"> -Find expert help -Open discussions -Social Interactions * "social interactions are the most important thing" | <ul style="list-style-type: none"> -Practical training based around behaviour * "a course but more practical based" | -Access | | | |

Appendix 9 Conceptually Clustered Matrix example Teachers

BITTT Conceptually Clustered Coding Matrix

| Data source | Teachers | | | Website | | | | CoP | |
|-------------|---|---|--|---|---|--|---|---|--|
| | Knowledge | Skills | Stressors | Resources | Strategies | Support | TPL | Barriers | Elements |
| Teacher 1 | | | | | what I learnt at a conference recently, he called them precision statements | I have not had any in school support | I have not been getting much actually, I have put in for a couple of mental health issue things and they have been rejected | Nothing in terms of training and development | |
| Teacher 2 | dealing with the arguments, temper, disobedience and just direct defiance and things like that are what I really need some more help with | I just need some more skills and strategies in behaviour management | Everything is just beyond me at the moment, I would just like some feedback on my teaching | I don't have the skills and resources that I need at the moment | strategies are just beyond me at the moment | I have been to executives and asked for help... they don't really have the time to help. It is very frustrating | I don't get any really | More than anything it was just the time there are like 2,001 things that you have got to do in a day | |
| Teacher 3 | | most teachers like ducks look quite serene and organised on the surface but underneath the legs are going like the clappers | he's just so disruptive and oppositional, he ticks everybody off, it's really hard | some of the resources on the website and I would implement a number of different things | We have done NCI as a whole school | he able to ask specific questions that related to a child in my class that the other information didn't provide an answer to | most of the teachers in the school... would like to do behaviour management professional learning | I think it's just the lack of time. No classroom teacher has time to do anything, you don't even have time to do your program, you don't have time to complete the work that you are supposed to do | Support strategies |
| Teacher 4 | I always praised him for good choices, I always explain that there with choices in life, not just in | | I think he had very little control in his life at home | information is all together so you don't have to look for it, so it is easy | I did need more specific resources | Last year I didn't feel emotionally supported at all and the year before either. I didn't | | I have to go to school if I want to use the Internet; especially in a remote area you don't have just as many pathways to get information | I really liked to be able to talk to somebody somewhere that is completely different, outside of |

BITTT Conceptually Clustered Coding Matrix

| | school | school | like being away at the course just doesn't help because there is so much travel involved in that | | | | feel I was looked at as a person | | | | school |
|-----------|--|--|---|--|--|---|--|---|--|---|--|
| Teacher 5 | | definitely that's the sort of skills that you need these days [behaviour management] | | | | | I have a fantastic AP here so that makes a world of difference, and she is just a godsend. | I have been away to PBL training, and connecting the country training | So the workload that is getting pushed on you, unless it is mandated, like I get emails and I looked at them and thought 'oh yeah yeah' it's always in my inbox, like you don't even have a folder you are still in my inbox and I'll deal with that I'll come back to it. You never ever come back to it. So how you make that something that teachers go 'this is a priority that I need to deal with' | | |
| Teacher 6 | diagnosis criteria would be useful | | we don't have the behaviour centre, the consultants and people are in Dubbo and we are 3.5 hours away so we don't get those people visit our school | resources or strategies for the student with ODD they are not always easy to find | need some strategies to help deal with that behaviour | A group of like minded teachers with students with ODD in isolated schools. I think that would be helpful | | | we are very isolated so we don't get [TFL] people come out here to do that, | I have 31 students in my class at Stage 3 and it is hard when you have got that many issues | it would be better if you just have them all at one spot |
| Teacher 7 | I think having a well trained knowledgeable teachers ... makes a world of difference | It is an advantage that you know how to deal with it (ODD behaviours) if you are equipped with the skills. | There was sort of no real induction program | An easy access point, sort of like a one-stop shop if you like, where you can go and look for strategies and support and other things that | You either have the ability to develop strategies or learn for yourself otherwise sort of nothing is happening | would absolutely want to share ideas with like minded people | there is no on-going professional support, it is kind of sink or swim You either have the ability to develop | | I think it is essential [a CoP]; Another great source is anecdotal but that requires a networking of people doing a similar thing. I | | |

BITTT Conceptually Clustered Coding Matrix

| | | | | | | | | | | |
|------------|--|--|--|--|---------------------------------------|--|---|---|---|---|
| Teacher 8 | | | | | people have used and found successful | If there was a way that they could just show me, even just a snapshot, that would be great | I liked the discussion and am happy to participate, but I wouldn't want to initiate it ... just not comfortable with it | strategies or learn for yourself... You don't actually get any professional development | rather be part of the online crowd than a pioneer | don't really think the chat needs to be in your face, for me it is more about the strategies. |
| Teacher 9 | | | | high truancy... when they are coming back offer missing a week ... so often it doesn't make sense ... they have missed key intros so there is not the continuity | | | Nobody supports me at the moment | We did historically we got lip service from that direction but ... no action | It is just a matter of time getting to do it. | think it would be tremendously of benefit (CoP) |
| Teacher 10 | | | | He is quite a big boy, he's very aggressive ... he disrespects women so you have to have different techniques to deal with him. | | Definitely ideas on how to deal with students with oppositional behaviours, because it's quite frustrating | | | don't have much time. And I sort of had to deal with him then and there; I just really didn't get time. | |
| Teacher 11 | | | | I mention the word writing... off they go; Misbehaving in | | | I go home have a drink of wine and talk to my daughter | | I have so many other things to do, I don't have time, I'm not very familiar with | |

BITTT Conceptually Clustered Coding Matrix

| | | | <i>order not to have do the work.; some parents are not supportive</i> | | | | <i>about the problems I have been having. Yep basically that's it.</i> | | <i>technology</i> | |
|------------|--|--|--|--|--|---|--|---|-------------------|--|
| Teacher 12 | | | <i>we have a lot of very young, first and second year out, who are trying to find their feet, [so there is no-one to help]</i> | | | | <i>No, not all that often, we are such a small staff there is no opportunities</i> | <i>I have done a little bit of training, very minimal training with the oppositional defiance stuff</i> | | |
| Teacher 13 | <i>just need some really good strategies to get them engaged and settled</i> | | | | <i>to give him the extra support that he needs and still supporting all the other students in the room at the same time is quite difficult</i> | <i>I know what it is like to be stuck and think my God I can't teach that kid, I don't know what to do next" I don't think I ever have, [been supported]. I just continue working and then get on with.</i> | <i>I have competing priorities of the things jumping up all the time. Just don't get time stop</i> | <i>[chat site] Without a doubt</i> | | |
| Teacher 14 | | | <i>On-task behaviour, compliance with instructions. They just refuse to do that and want to do their own thing.</i> | | <i>Just the different strategies that you can get out of it</i> | | | | | <i>If you knew they had the same type of thing as you then yeah very much.</i> |

Appendix 10 Thesis Declaration

Declaration of contribution to Journal Articles

Article One (Chapter Four) is a published article:

McLean, F., & Dixon, R. (2010), Are We Doing Enough? Assessing the Needs of Teachers in Isolated Schools with Students with Oppositional Defiant Disorder in Mainstream Classrooms. *Education in Rural Australia*, 20 (2), pp. 53-62.

My role is lead author of this paper, with my primary PhD supervisor as co-author. I carried out this research project and my co-author provided contribution through collaborative discussions and critical revisions.

Article Two (Chapter Five) is a published article:

McLean, F.M., Dixon, R.M. and Verenikina, I. (2014) Bringing It To The Teachers: Building a professional network among teachers in isolated schools. *Australian and International Journal of Rural Education* 24 (2), pp. 15-22.

My role is lead author of this paper, with my PhD supervisors as co-authors. I carried out this research with considerable contribution from my supervisors through collaborative discussions and critical revisions of the research and writing process. Dr Roselyn Dixon is second author on this paper as she is the primary PhD supervisor.

Article Three (Chapter Six) includes an article under review by *The International Journal of Adult, Community and Professional Learning*:

McLean, F.M., Verenikina, I. and Dixon, R.M. Bringing It To The Teachers: Refining an online learning environment for teachers in isolated settings.

My role is lead author of this paper, with my PhD supervisors as co-authors. I carried out this research with considerable contribution from my supervisors through collaborative discussions and critical revisions of the research and writing process. Dr Irina Verenikina is second author on this paper as it has a design-based research focus which encompasses her expertise.

Signed:

Fiona McLean

Dr Roselyn Dixon

Dr Irina Verenikina