

**Shaping School Culture to Transform Education:
An Ethnographic Study of New Technology High Schools**

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Abstract

Shaping School Culture to Transform Education: An Ethnographic Study of New Technology High Schools

There have been numerous calls for the radical transformation of public education in the United States. Reform initiatives are fuelled by the need to prepare students to meet the challenges of the networked knowledge society. This thesis examines the shaping of school culture within two public non-charter high schools, in different regions of the United States and with different socioeconomic characteristics, that are implementing the “New Technology” (or “New Tech”) model of education: Pacific Coast High, a well-established New Tech school, and Midwest High, a school that recently transitioned to the model and is still in the process of culture change.

This rapidly expanding school reform network includes 168 schools in the United States and 7 international sites in Australia. The New Tech Network, the organisation that provides training and support for these schools, explicitly emphasises the goal of changing the culture of education. They describe themselves as a network of schools that promotes a culture of trust, respect, and responsibility and uses project-based learning and “smart use” of technology to redefine teaching and learning.

I employed an ethnographic multisite case study design to gain an understanding of the everyday experiences and practices of teachers, students and school leaders as they work through the process of implementing and maintaining the New Tech model. Fieldwork included six and a half months of participant observation of secondary classrooms, school meetings, professional development sessions, and New Tech training conferences as well as semi-structured interviews with teachers, students, and administrators. My analysis provides an understanding of the influence of local context, including historical background (local and national) and economic and political structures.

The research findings indicate that a deliberate focus on “culture-building,” with particular values like trust, respect and responsibility, underpin and shape relationships, behaviours and educational practices, including the extensive use of ICTs. A multi-faceted approach to socialisation and enculturation, which includes extensive peer-to-peer support, is involved in inculcating values and shaping behaviours and practices. The New Tech model shifts the focus of education from a primarily individualist competitive endeavour (reflecting the broad cultural orientations of modern society in the United States) to a more collectivist approach, with students working in collaborative groups supported by the use of ICTs. Schools operate as learning communities with collaborative partnerships with the wider community. Pacific Coast High is an exemplar for the model in its fully implemented form, while Midwest High’s transition to the model has been fraught with tensions as they navigate numerous context-specific challenges.

I argue that real reform requires an intentional effort to change the culture of education and that pedagogy and culture have to necessitate the use of ICTs to more fully integrate them into the education process. I characterise the culture I observed in New Tech schools, particularly at Pacific Coast, as an “*ICT-facilitating school culture*” with (1) a collaborative project-based focus and encouragement of students to communicate and find information themselves which pushes them to use ICTs, (2) a system of cultural values that, when internalised, operates as a means of social control, keeping students on task as they work independently and collaboratively, using ICTs, including social networking sites, and (3) an ideal classroom layout and technology infrastructure that facilitates the use of ICTs. I characterise the New Tech Network of schools as a revitalization movement, addressing the needs of a changing society by changing the culture of education.

Chapter 1

Education Reform and the Shaping of School Culture

The strength of the American economy is inextricably linked to the strength of America's education system ... America's ability to compete begins each day, in classrooms across the nation—and President Obama knows we must comprehensively strengthen and reform our education system in order to be successful in a 21st century economy (United States White House, 2015, n.p.).

There have been, and still are, numerous calls for the radical transformation of public education in the United States and education reform has been a major initiative of President Obama's administration. Reform initiatives are fuelled by the need to prepare students to meet the challenges of a changing society. As is evident from the quote above, reforms have been touted as absolutely necessary for the United States to compete in the global economic marketplace.

One of the goals of a "transformed" education system is to ensure that students have what some refer to as "21st century" or "deeper" learning skills (Partnership for 21st Century Learning, 2009; Hewlett Foundation, 2013; National Research Council, 2012; Noguera, 2015; Metha and Fine, 2015). These skills, which include the acquisition and transference of knowledge, learning to work collaboratively, learning to think critically and problem-solve, and the use of information and communication technologies (ICTs), are increasingly seen as necessary to meet the changing needs of society. Politicians, scholars and business leaders are critical of the current structures and practices of the public education system, arguing that they are inadequate and outdated. They argue that a new way of envisioning and participating in the education process is needed to prepare students for the global economy.

However, education reform is a complex matter and aspects of the local context, including historical background, economic and political influences, and local understandings and forms of practice, impact reform efforts. Several scholars have argued that an understanding of school culture is necessary when working towards school improvement and that successful school reform requires a focused and intentional effort on changing school culture (Rutter et al., 1979; Deal, 1985; Stoll and Fink, 1989; Fullan and Stiegelbauer, 1991; Hargreaves, 1995; Furlong, 2000; Tondeur, 2009; Deal, 2009; Fullan, 2011). Given that school systems need to change, it follows that there will need to be a focus on understanding how school cultures are deliberately being shaped in ways that support reform efforts.

This thesis is broadly about education reform in the United States. More specifically, it examines a particular reform effort, the New Tech school model, and the efforts involved to shape school culture in ways that support the model. I examine these processes within two high schools, both part of the New Tech Network of schools. The New Tech Network is an organisation that provides training and support to 168 schools located across the United States with 7 international sites in Australia. This network of schools can be seen as part of the larger movement in the United States calling for a radical transformation of educational practices to prepare students to meet the challenges of a changing society.

To meet these challenges, the New Tech Network departs from more traditional approaches to education such as long lectures, bookwork, and students working mainly on individual assignments. Instead, collaborative project-based learning is utilised as the main instructional method supported by extensive use of ICTs. Additionally, teachers are viewed more as facilitators of learning and less as

purveyors of information and students take a more participatory role in the education process.

New Tech schools have garnered much public support and publicity. For example, Manor New Tech high school in Texas¹ received a nod of approval from President Obama, who visited the school in 2013. Subsequently, this school was featured on the U.S. Department of Education website² as an excellent example of a “transformed” school. New Tech schools across the country host numerous visits each year from educators, politicians and others who want to learn more about their model of education.

Several New Tech schools have been the focus of positive media coverage. In an article on the Huffington Post website, New Technology High School in Napa, California was described as “the school of the future” (Barseghian, 2011, n.p.). This same school was also featured in an online CNN article focused on the school’s embracing of students’ use of technology, including social media, as a useful tool in the education process (Kelly, 2013, n.p.). Media coverage and political endorsements and accolades certainly make these schools more visible. However, reports based on brief school visits can only reveal a superficial understanding of life in New Tech schools.

There has also been interest from academic scholars. New Tech schools have been featured in a report by the Harvard Achievement Gap Initiative (Ferguson et al., 2010) and a report by The School Redesign Network at Stanford University, in collaboration with Justice Matters, a non-profit social justice organisation

¹ This was not one of my fieldsites.

² See <http://www.ed.gov/news/press-releases/fact-sheet-redesigning-americas-high-schools>

(Friedlaender et al., 2007). Both reports highlight the innovative aspects of the model.

Additional research on these schools includes a research report on the implementation of the New Tech model in Indiana schools (University of Indianapolis, Center of Excellence in Leadership of Learning, 2011) and another on the characterisation of an exemplar non-selective STEM-focused New Tech school (Lynch, Spillane, Peters, Behrend, Ross, House, and Han, 2013). Articles on New Tech schools focus on teacher leadership as it relates to an empowered school culture (Bradley-Levine, Mosier and Perkins, 2014); student perceptions of the New Tech model and project-based learning (Mosier, Bradley-Levine and Perkins, 2015); and New Tech practices that improve student outcomes in STEM fields (Gourgey, Asiabanpour and Fenimore, 2010).

There are also a number of doctoral research outputs on New Tech schools. They focus on the implementation of project-based learning (English, 2013; Bullock, 2013); effective project-based learning practices (Savage, 2012); group leadership behaviours among teachers utilizing project-based learning in New Tech schools (McDowell, 2009); teacher perceptions of technology-infused project-based learning (Gratch, 2012); effects of project-based learning on student's high school and college achievement (Craig, 2015); challenges of implementing the New Tech model and the impact of project-based learning and ICT use on academic achievement (Freshwater, 2009); how the characteristics of each New Tech school impacts implementation of the model (Lenhoff, 2013); student achievement in New Tech schools (Machen, 2014); and the benefits and problems with the use of a business model and computer technology in the early years at the first New Tech High School (Van Buren, 1999). Additionally, several internal and Network partner reports can be

found on the New Tech Network website.³ These studies make many contributions in describing particular aspects of the educational process at New Tech schools. However, my study is unique in its contribution, as it exemplifies a deep anthropological approach utilising the concept of culture as a conceptual framework, along with a wide range of additional theoretical concepts that emerged from the data, to make sense of the findings. It is based on 6-1/2 months of immersive ethnographic fieldwork and provides an extensive analysis of New Tech school culture and how implementation of the model shapes behaviours and practices at two schools. It also contextualises New Tech within the broader culture of the United States, especially in terms of the changes in society associated with the emergence of the networked knowledge society. It does not focus on one singular issue or practice but provides a more holistic view of New Tech schools within the cultural, historical, and political landscape of the U.S. public education system.

The New Tech Network is working to change the culture of American education with their “innovative approach to instruction and culture” (New Tech Network, n.d., para. 3). But what are the cultural ideals of the New Tech Network and how are they instantiated in particular schools? What does the process of culture change look like in two very different New Tech schools, each located in different areas of the country, with students from different socio-economic backgrounds? This study addresses these questions using an ethnographic case study approach to examine two schools: a well-established New Tech school, which has been in existence for over 10 years, and a long established traditional school which adopted the New Tech model in 2010.

³ See <https://newtechnetwork.org/resources/category/research/page/2/>

This study is timely given the national focus on school reform. My intention is not to question the need for school reform but instead to illuminate the phenomenon of school culture by describing and analysing the “on-the-ground” interactive processes and the complexities involved in deliberate efforts to shape school culture and education practices. These efforts echo academic scholarship that argues that real reform can only occur with a change in the basic educational culture.

1.1 Impetus for the Study

Having worked as a high school teacher and technology curriculum coordinator, I initially became interested in studying New Tech schools because I was intrigued by the pervasive integration of ICTs as a central aspect of the culture of New Tech schools, with each school having one-to-one networked computer access for students. However, as I began to learn more about these schools and the emphasis they place on changing the culture of education, the focus of my study broadened from specifically examining school culture as it relates to the use of ICTs to a more inclusive focus on school culture as it relates more generally to the implementation and maintenance of the New Tech model (which encompasses not only an approach to ICT use but also a value system, a mode of practice, and a philosophy of education).

Much of my initial information about the schools was gleaned from searches conducted via the internet. There was a wealth of information available online from the New Tech Network website and also a number of YouTube videos posted by students and staff at individual New Tech schools. These sources provided me with a digital glimpse of what life is like in these schools and they were helpful in the

development of my initial research questions. For example, one online video captured my attention and increased my interest in these schools. It was a well-produced promotional video with administrators, teachers and students speaking very positively and enthusiastically about the school and their experiences. The video contained a good deal of what I would consider to be “hype.” However, beneath the surface of all the hype were particular words and phrases that stood out as aspects of the school’s culture. Specific values like trust, respect, responsibility, collegiality and professionalism were mentioned. Additionally, the phrases “not like a traditional high school,” “out of the ordinary,” “new prototype in education,” and giving “traditional academics a real-world spin” (New Tech @ Zion-Benton East, 2009, n.p.)⁴ were used in the video to describe the school. These were similar to the descriptions I had read on the New Tech Network website and in literature about the schools.

The knowledge gained from this initial research led me to surmise that there might be a deliberate focus on developing a particular culture of education, with an emphasis on specific values to support the educational goals of New Tech schools. Also, as mentioned earlier, New Tech schools promote the extensive use of ICTs to support educational goals and I wanted to understand how school culture shapes the use of ICTs.

An ethnographic investigation was needed to adequately understand these processes and to determine if and how New Tech breaks with the traditional model of education. This investigation will develop an understanding of the espoused values of the New Tech Network and what the values look like in action within different school contexts. In other words, this study examines how the New Tech

⁴ This was not one of my fieldsites.

value system shapes practices, social interactions and individual behaviours as well as the tensions that arise as a result of implementing and sustaining this approach to education. These are questions that have not been adequately explored in the existing literature on New Tech schools.

As a former teacher, I am well aware of the challenges of implementing reforms. I believe it is crucial for reformers to understand the on-the-ground realities of implementing reforms with all the complexities and nuances. This is particularly important when government officials are promoting certain models of reform as “ideal.” As Cuban (2013:187) notes, reformers need to know clearly what happens inside the “black box” of classroom practice if they want to move beyond passionate rhetoric to improve teaching and learning. This study provides the reader with a view inside the black box, illuminating the practices of New Tech school members, the beliefs and values that underpin these practices, and the tensions associated with these practices.

1.2 Thesis Overview

The over-arching research question for this study is:

- How is school culture shaped by the implementation of the New Tech model at each site?

I approach this question via the study of several sub-questions.

- What are the cultural ideals of the New Tech Network?
- How are members enculturated into the New Tech model of education?
- How do teachers, students and other stakeholders at each site describe their experiences working within the New Tech model (including their engagement with ICTs)?
- What challenges arise in the process of implementing the model at each site?

Chapter 2 contextualises my research on New Tech schools within the broader history of school reform efforts in the United States. A discussion of the history of reform efforts is presented to provide an understanding of how New Tech schools are situated within the cultural, historical, and political landscape of the U.S. public education system. This chapter provides pertinent information on the various societal forces that converge to impact the education system and describes the dominant cultural model of education in the U.S. Additionally, this chapter discusses my central conceptual framework, which is focused on culture, particularly school culture. I examine anthropological and educational understandings of the culture concept. This provides a basis for examining the role of school culture in New Tech schools, with implications for education reform efforts more broadly.

Chapter 3 provides a discussion and justification for adopting an ethnographic multisite case study design for this thesis. I detail my understanding of the ethnographic process and also discuss my research methods, which included interviewing and participant observation. These methods, along with the development of relationships in the field helped me to gain an understanding of the everyday experiences and practices of school leaders, teachers and students as they work through the process of implementing and maintaining the New Tech model. In this chapter, I also discuss the selection of sites and important aspects of my fieldwork and data collection processes as well as the benefits and challenges of the research approach.

Chapter 4 examines the history and development of New Tech schools from the origins of the first school, which was, and still is, referred to as “the school that

business built.”⁵ This contextual information highlights the societal influences that prompted the creation of the first school and shaped elements of the school’s culture. Lastly, I utilise two documents, an unofficial history and a school success rubric obtained from the New Tech Network, to discuss the initiative to replicate the model and also the cultural ideals promoted by the Network.

Findings from my fieldwork at two New Tech schools that I refer to as Pacific Coast New Tech and Midwest New Tech are presented in chapters 5 and 6. These findings are discussed in relation to my research questions, which focus on stakeholder experiences of working within the model, including socialisation and enculturation processes for teachers and students, relationships between school members, their engagement with ICTs, and the challenges that arise for members at each site. These challenges differ greatly, as Pacific Coast High School is a well-established New Tech school and Midwest High School is transitioning from a traditional model of education to the New Tech model. A discussion of my findings, as they relate to several theoretical concepts including socialisation, enculturation, identity and social control, is presented in chapter 7. I present the conclusions and implications of the research findings in chapter 8.

⁵ As stated in Van Buren (1999).

Chapter 2

The History of U.S. Education Reform and the Role of School Culture and ICTs

2.1 School Reform and the Knowledge Society

A key concern of education reformers in the United States is that the public education system is still operating very much as it did during the industrial age and thus has not kept up with societal changes. Put simply, many reformers believe the system is behind the times and that a new approach to teaching and learning is needed, one which prepares students to become “21st century” learners. This new approach requires a reconsideration of the role of the teacher. Teachers will need to cultivate attitudes and practices, for themselves and their students, that promote and enhance 21st century learning. This will involve a cultural shift away from more traditional models of education to an approach that is more student-centred and collaborative, one in which students learn to become self-directed critical thinkers and problem-solvers who can succeed in the knowledge society. The notion that the knowledge society has emerged as a new social system and that students must be prepared to work in a knowledge economy has influenced the thinking of education reformers, particularly government leaders who link education to the nation’s success. But what exactly is the knowledge society and what do we mean when we refer to 21st century learners? Also, how are the two terms linked?

Defining the term “knowledge society” is not straightforward, as there are various debates as well as theories, definitions and understandings associated with the term. In fact, Karvalics (2007: 5) characterises debates about divergent understandings of the concept as “a constant battle.” His characterisation is accurate for a number of reasons. First, there are several other terms associated

with the knowledge society, for example, the “information society” (Masuda, 1968; Hayashi, 1969; Machlup, 1962; Webster, 2014) and the “network society” (Drucker, 1993; Mansell and When, 1998; Stehr, 1994, Castells, 1996). Each is used to support the idea that a new social system has emerged due to transformative changes in post-industrial society.

In addition to the number of associated terms, there are also debates about clarity regarding the meaning and limitations of each concept. For example, UNESCO (2005: 19) argues that there is a distinct difference between the terms information and knowledge, noting that the information society is more associated with the technologies that have allowed the spread of information and that information is not the same as knowledge. Webster (2010: 37) critiques theorists’ claims that an information society has indeed emerged. He contends that some theorists have made faulty claims that increases in the quantity of information available have led to qualitative changes in society. He raises the question of the quality of the information available to us, citing Postman (1985) and Washburn and Thornton (1996) who use the term “garbage” to describe much of the information available today. Webster also argues that definitions of the information society lack qualitative elements and that it is the qualitative, not the quantitative, aspects of information that lead to systematic changes in society. He notes that a change is said to have occurred if,

the character of information is such as to have transformed how we live. The suggestion here is that theoretical knowledge/information is at the core of how we conduct ourselves these days (Webster, 2014: 11).

Webster reiterates questions asked by Roszak (1986) which get at the qualitative aspects of information. Those questions are:

Does the availability of more information make us better informed? What sort of information is being generated and stored and what value is this to the wider society? What sort of information occupations are expanding, why and to what ends? Webster (2014: 29).

I agree with Webster on these points and later in this section, Bereiter (2002), in a discussion about knowledge, corroborates Webster's stand on the prominent role of theoretical knowledge in the knowledge society.

The human element of processing information is a key factor in discussions about knowledge. For example, UNESCO (2005: 19) suggests that knowledge encompasses what one does with information, as it involves a person's critical thinking and ability to analyse and judge information, incorporating the most useful and interesting information into their knowledge base. In addition, Karvalics (2007: 8) explains that information and knowledge are two sides of the same coin, with knowledge being "transformed" or "contextualized" information. The concept of knowledge societies also includes "much broader social, ethical and political dimensions" (UNESCO, 2005: 17). For example, as mentioned earlier, the political dimension, with its focus on preparing workers for the knowledge economy, puts great pressure on the education system to adapt in an effort to prepare students to meet the needs of the nation.

Bereiter (2002: 64) develops the concept of knowledge further, arguing that there are different types of knowledge. One type, conceptual artefacts (ideas, concepts, theories or designs), are immaterial but are often represented in a tangible form. For example, he refers to the design of a car as a "conceptual artefact." The blueprint is the tangible form or representation of the design and the actual car is the "material artifact." He suggests that within a knowledge society there will be an increased need for workers capable of developing and working on

“conceptual objects rather than on the physical objects to which they are related” (Bereiter, 2002: 65). Bereiter and Webster seem to be in agreement on the prominence of theoretical or abstract knowledge in the knowledge society and the kinds of workers needed for a knowledge economy. This shift in what is needed from workers is also corroborated by Powell and Snellman (2004: 199), who note that the knowledge economy refers to the idea that economic growth will depend more on knowledge and intellectual abilities than on labour.

In addition to the concepts of information and knowledge societies, there is also the notion of the “network society” (Castells, 1996). Castells makes the case for the use of this term, arguing that information and knowledge have been key elements in society throughout history. However, what is new is the social structure that has emerged as a result of “the interaction between the new technological paradigm and social organization at large” (Castells, 2005: 3). The salient idea here, for this thesis, is that digital networking technologies and their affordances have influenced and, in many cases, transformed dimensions of social organisation. Social organisation refers to the interactive associations or networks among individuals and groups. Castells distinguishes two types of labour in the network society: self-programmable labour and generic labour. Self-programming capabilities refer to the ability to locate information and recombine or reconstruct it and apply it towards a particular task or goal. He explains that this involves both creativity as well as the ability to adapt. He has a very bleak outlook for workers whose jobs consist of generic labour. He characterises these tasks as “not valued” and suggests that these jobs are in danger of being automated or outsourced to reduce organisational costs (Castells, 2004: 26).

This concept of the network society will be revisited in chapter 7 and discussed in relation to the development of self-programming capabilities in students supported by the use of ICTs, which is a key feature of New Tech schools. I examine participant experiences of utilising these tools in ways that could be considered transformative for an education setting.

All three concepts discussed here, information society, knowledge society, and network society, have in common a recognition of the decline of the manufacturing sector and the growth of the service sector, with increasing demand for knowledge workers. Advances in ICTs make possible the expanded global reach, speed, and quantity of information processing and knowledge exchange. Despite the ongoing complexity and disagreement amongst the academic community, I support the views of Karvalics and Castells and consider the U.S. to be a networked knowledge society. However, I would argue that within the U.S., the emergence of a networked knowledge society is an ongoing process with different groups of people and organisations, like schools, at various stages of development.

Some groups have the requisite ability and skills to understand how to use and process information in ways that are advantageous. Others are, unfortunately, marginalised for various reasons and unable to fully benefit from the information boom and network capabilities. These reasons include lack of economic resources, which translates to a lack of access to the technologies that provide information. Additionally, those who have access may lack the necessary knowledge to filter the vast quantity of informational sources and to determine which ones are valid and also how to utilise the technology and the information in a sophisticated manner. These issues lend themselves to discussions of the “digital divide,” which include variations in types of access available to users, as well as obstacles that hinder

access (Van Dijk and Hacker, 2003; Eynon, 2009) and forms of support that assist in the development of digital skills (Eynon and Geniets, 2015). How we address these issues is crucial, as the goal should be to widen participation and opportunity in the networked knowledge society.

Again, the political implications for the concepts discussed here are evident in the language of U.S. Department of Education officials who link the success of the nation to education geared towards preparing students for a knowledge society. For example, Arne Duncan, former United States Secretary of Education stated,

In a knowledge economy, education is the new currency by which nations maintain economic competitiveness and global prosperity. Education today is inseparable from the development of human capital (Duncan, 2010a, n.p.).

He makes a point to link education with the development of human capital. Two aspects that are central in the theory of human capital are (1) “that education increases the productivity and earnings of individuals; therefore, education is an investment” and (2) “this investment is ... the key to the economic growth of a country” (Tan, 2014: 412). Therefore, education will need to be shaped in ways that will ensure the nation’s success in a knowledge economy (Robertson, 2005: 152).

However, some question whether education is mainly about supporting the knowledge economy. Hargreaves (2003: 40) suggests that there are serious problems associated with the knowledge economy. For example, he argues that greed makes profit-building the primary goal, with no regard for the needs of others. He suggests that the purpose of education should also include building character and ways of thinking that do not marginalise those who are different. What he is suggesting is that education should not be solely driven by the economy but that it

should also encompass education in social skills that will enable students to get along with and work well with others.

Biesta (2015a: 77) also suggests that education should be focused on more than economic concerns and that such a narrow focus is problematic for efforts aimed at providing a “good education.” He argues that the purpose of education is multi-faceted. He recognises “qualification, socialisation, and subjectification” as three “domains of educational purpose.” Qualification prepares students generally for life in society, which may include careers, further education or a number of other opportunities. He connects qualification with the “transmission and acquisition of knowledge and skills and dispositions.” Socialisation is also an important aim of education and this involves cultural learning that prepares students to function in a particular society. Subjectification, the third aspect, has to do with developing agency and ones’ sense of self. Biesta suggests that education systems, to their detriment, have tended to focus heavily on the qualification domain. However, he suggests that all three domains are crucial and that there needs to be more of a balance between the three to provide a “good education.”

I do not agree that there is too much focus on qualification but I believe changes are needed in the ways in which schools focus on it. 21st century and deeper learning competencies, particularly connecting learning to real world experiences, enhance the dimension of qualification. For example, connecting school and workplaces may provide opportunities for students to deepen an interest in a particular area and link them with experts who work in their particular field of interest. I do agree that both socialisation and subjectification are extremely important domains, particularly because many schools are plagued with bullying, other forms of violence and suicide. Schools will need to consider how to develop

cultures in which students feel a “sense of belonging and community” (Hargreaves, 2003: 36).

Education for the 21st century

Recent calls for reform focus on helping students to develop “21st century learning skills.” In fact, “21st century learning” has become one of the dominant buzz phrases associated with changing the practices and structure of education to meet the needs of a changing society. There are a number of organisations around the world that have developed their own frameworks for 21st century skills (Binkley et al., 2010). However, more recently, the language of some reformers has shifted from the use of the term “21st century learning” to “deeper learning.” Discussions of deep and surface approaches to learning are certainly not new and have roots in educational psychology (e.g. Marton and Säljö, 1976).

I first learned of this shift in language during a conversation I had with the former Senior Director for School Design and Implementation for the New Tech Network. Also, Lydia Dobyns, CEO of the New Tech Network, explains that the phrase “21st century education” is “empty phraseology” and that it does not capture the all-important aspect of “deeper learning,” which is the phrase she prefers to use. In the online Huffington Post education blog, she explains that deeper learning expresses,

both the acquisition of knowledge and the transference/application of knowledge along with developing skills employers find valuable -- collaboration, communications and critical thinking (Dobyns, 2013, n.p.).

This focus on the transfer and application of knowledge is also discussed in a study by the National Research Council. They define deeper learning as “the process through which an individual becomes capable of taking what was learned in one

situation and applying it to new situations (i.e., transfer)” (National Research Council, 2012: 6). They explain that what makes this learning deep is that it goes well beyond the recollection of facts and involves cognitive, intrapersonal, and interpersonal competencies and that deeper learning is demonstrated by the ability to transfer knowledge and determine the relevance of its application.

The William and Flora Hewlett Foundation, in efforts to promote their framework, commissioned the Deeper Learning Research Series⁶, a collection of eleven reports on deeper learning written by academics across several U.S. universities. For example, Conley (2014: 11, 13) emphasises the need for assessments which can gauge deeper learning skills. He argues that these skills are important because they help develop students’ ability to demonstrate “conceptual understanding, to relate smaller ideas to bigger ones, and to show that they grasp the overall significance of what they have learned.” Noguera, Darling-Hammond and Friedlaender (2015: 3) focus on issues of equity, suggesting that efforts will need to be made to ensure schools serving low income students and students of colour develop the capacity to offer opportunities for deeper learning. They argue that this involves a focus on school contexts but also on issues within the community or “stressful conditions” that impact the education process in lower income communities. Metha and Fine (2015: 4) note that deeper learning equates to what cognitive psychologists refer to as learning for understanding. This work, by cognitive psychologists, has been ongoing for decades and Wiske’s (1998) work, based on Harvard University’s Project Zero, outlines an approach to teaching for understanding. Metha and Fine note that creating the conditions to develop these competencies across whole school systems will be challenging and they provide

⁶ Series can be accessed from <http://www.jff.org/initiatives/students-center/deeper-learning>.

several suggestions for how schools should “rethink” the education process so that it best facilitates deeper learning.

The Hewlett Foundation and its funding efforts are aimed at promoting and popularising their framework and the “deeper learning network,”⁷ a group of over 500 schools across the U.S. They have commissioned academics to publish on the topic and have also created a significant online presence in an effort to generate,

a more robust national commitment to deeper learning for all students and to catalyze the broad-based capacity to deliver it within the nation’s K–12 education system [with] 80 percent of all U.S. students ... in schools committed to deeper learning by 2025” (Hewlett, 2012, n.p.).

A summary of the deeper learning competencies outlined by the Hewlett Foundation (Hewlett, 2013, n.p.) follows:

Mastery of Core Academic Content is the first competency and it refers to students’ understanding of the academic content and participation in learning activities that allow them to use their knowledge in real-world situations. Students should be provided with opportunities to use knowledge in meaningful ways, as this is more engaging and promotes retention of what has been learned.

The second competency, *Critical Thinking and Problem Solving*, involves the use of research methods and techniques to solve problems specific to the content area. Students conduct research and proceed to evaluate and analyse information to form their arguments and support hypotheses. Students are also called upon to be creative and innovative in this process.

Working Collaboratively is the third competency and it involves working in groups to solve problems and complete projects. The goal is for students to share

⁷ See http://deeperlearning4all.org/wp-content/uploads/2011/11/Deeper-Learning-Overview_Final.pdf

ideas and work together to determine how a task will be completed. The fourth competency, *Effective Communication*, involves the organisation and communication aspects of a task. Students are required to think about and work through how best to communicate information to an audience. Also, a feedback process among peers should be instituted. This serves as a means for improving student work.

The fifth competency, *Self-Directed Learning*, requires students to learn how to plan, stay on track, and achieve the goals set for learning tasks. Students also learn how to work through obstacles and seek help when needed. This involves an understanding of one's own strengths and weaknesses. A desire and willingness to commit the time and effort needed to produce high quality work is also part of the process.

The sixth and final competency is the development of an *Academic Mindset*. The Hewlett Foundation refers to this as a motivational competency. It combines efforts towards the enhancement of student engagement with efforts to increase students' positive beliefs about their ability to achieve the academic goals presented. Learning is a social process and the goal of developing the academic mindset is bolstered if students feel connected, accepted and supported in a community of learners and they feel that they are capable of achieving academic goals. Additionally, the development of an academic mindset is supported if the academic tasks have real-world relevance for students and they believe that the knowledge and skills gained from their hard work are valuable.

These skills are similar to ones developed by the Partnership for 21st Century Learning (2009). However, the partnership's set of skills also directly refers to the development of information and media literacy skills, with an emphasis on

understanding how to evaluate information and use it for research purposes, as well as the use of media for the creation of projects.

The National Research Council (2012: 11) notes that the education accountability system still focuses heavily on standardised tests with an emphasis on the “recall of facts and procedures.” This poses major challenges for the development of deeper learning competencies. The Hewlett Foundation suggests that “the educational system needs to shift to tests that include essay writing, problem solving, and even portfolios of student work, including student-developed research papers and performances” (Hewlett, 2012, n.p.) to assess deeper learning competencies. It is not clear if this will constitute more testing for students or if the new tests will replace current ones.

Deeper learning competencies are desirable for all students. Certainly, evaluating and analysing information, applying knowledge in real-world situations and being self-directed coincide with Castells’ view of the “self-programmable” worker in the network society discussed earlier in this chapter. They also help to develop intellectual capabilities, which are key in a knowledge economy (Powell and Snellman, 2004: 199).

I would also suggest that these competencies can address the multi-dimensional purpose of education set out by Biesta (2015a: 77). They certainly address the issue of “qualification” in that they provide students with experience applying what they learn to real world scenarios. Also, the collaborative dimensions of the deeper learning framework address aspects of “socialisation,” as students are learning interpersonal skills that will be helpful in their future social relations. Lastly, “subjectification” is addressed, as students’ sense of agency is developed as they become more responsible for directing their own learning and communicating

their knowledge, and working collaboratively may enhance students' sense of self as they take a position and have a voice in interactions with group members.

However, it can be argued that a singular emphasis on deeper learning, with surface learning seen as not useful, is problematic. There are cases where "rote learning" is desirable and beneficial. For example, there may be some classes where there is a focus on breadth of exposure to certain knowledge and where the goal is to provide students with insight but not necessarily immediate deeper learning. Also, in the case of physics or chemistry classes, there are laws, equations and formulas that need to be memorised. Certainly both surface and deep learning are essential to the education process.

Again, discussions of deeper learning approaches are not new. What is new is the commercialised packaging, branding, and extensive promotion of a particular deeper learning framework created by the Hewlett Foundation, an organisation with close ties to the New Tech Network. It is important to point out that philanthropic foundations, with roots in the corporate sector, wield a significant amount of political power and often work to shape education policy. While deeper learning is important to the education process, we must also consider the overall agendas of foundations pushing their particular programme for education reform. Certain aspects of their agendas may be desirable and other aspects could prove detrimental. I will say more about this in chapter 8. Currently, the deeper learning focus runs contrary to government reform efforts heavily focused on standardised testing. These efforts have deep roots in the history of education and reflect ideological differences between pedagogical progressives and administrative progressives. The following section provides a detailed discussion of the issues and the conflicts within the history of school reform efforts in the United States.

2.2 The History of School Reform Efforts

As I have discussed, education reform efforts in the U.S. have historically been linked with the success of the nation. Evidence for this also appears in a 1983 report by the National Commission on Excellence in Education. The report was titled *A Nation at Risk: The Imperative For Educational Reform*. This report propelled education reform to the forefront of national attention. It claimed that,

the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people (National Commission on Excellence in Education, 1983, n.p.).

The report caused widespread concern regarding the state of public education. It was critical of the quality of American education, detailing serious problems and failures in the education system. The findings of the report indicated that,

declines in educational performance are in large part the result of disturbing inadequacies in the way the educational process itself is often conducted (National Commission on Excellence in Education, 1983, n.p.).

The Commission identified several areas of concern and the recommendations for reform made by the Commission focused on implementing standardised testing, changing the curriculum and reorganising students in the learning environment to make the education process more efficient. In addition, the report stated that recommendations for reform, “are based on the beliefs that everyone can learn, that everyone is born with an urge to learn which can be nurtured ...” (National Commission on Excellence in Education, 1983, n.p.). However, this is empty rhetoric, as it is unclear how standardised testing and implementing efficiency measures can assist in nurturing students’ desire to learn.

This is one of many efforts in the long and often tumultuous history of education reform. Much of what has been thought of as reform has involved policy-

based initiatives that focus on student achievement with measures of success, for both teachers and students, heavily associated with standardised test scores.

A discussion of these reform policies is warranted, as they illustrate the highly controversial and obsessive reliance on standardised testing as a measure of achievement and accountability. This narrowing of focus to standardised test scores is one of the central characteristics of the culture of education in the United States. Hargreaves (2003: 2) is critical of the heavy emphasis on test scores and standards and argues that there is a real need for stronger communities in schools, as there is both an intellectual and an emotional aspect to learning and achievement. He goes on to explain that reform efforts focused mainly on improving test scores have failed to prepare students for the knowledge economy.

One such reform effort is the *No Child Left Behind Act* of 2001. This act stipulates that schools failing to achieve adequate progress on standardised tests are subject to highly punitive measures. One of the main goals of this act was to promote accountability for academic success. Under this law, government-run schools receiving federal funding are required to measure student academic progress by administering a yearly standardised test and schools must show adequate yearly progress. Schools that do not show adequate yearly progress for five consecutive years must be restructured. Possible options for restructuring include: 1) reopening a school as a public charter school; 2) replacing all or most of school staff, including the leadership, 3) contracting a private management company with a demonstrated record of effectiveness to operate the school; 4) state takeover of the school in states where this is an option; and 5) engaging in any other major restructuring of the school's governance arrangement. The *No Child Left Behind* policies have angered and alienated educators who feel that the politicians

mandating these procedures do not understand the on-the-ground realities of life in schools. It is widely accepted that these highly punitive measures have failed to produce the anticipated results (Darling-Hammond, 2006; Hursh, 2007).

Debates about educational practices and the heavy reliance on test scores can be traced back to the late 19th and early 20th century, when the progressive education movement played a major role in shaping educational institutions. Progressive education has also been referred to as “new” or “modern” education. Cuban (1986) discusses the ideas of two groups within the progressive education movement. The pedagogical progressives were influenced by the work of John Dewey and called for a very different vision for the role of the teacher as a “coach and adviser,” as well as a more student-centred, differentiated form of instruction taking into account student interests. In addition, Dewey advocated for more learning by doing, working collaboratively with others, and making connections with the world outside of the classroom (Dewey, 1906, 2008). These same ideas are encompassed in the deeper learning competencies discussed earlier in this chapter. In contrast, the efficiency-minded or administrative progressives were more focused on measuring skills and increasing efficiency and productivity in schools. This group was influenced greatly by Edward Thorndike, a psychologist known for his work in behaviourism. He took a scientific and statistical approach to the study of education and strongly believed in the quantification of human experiences. According to Tomlinson (1997),

Thorndike’s views of learning, intelligence and scientific management provided the bureaucratically-minded educators of the era – the men David Tyack and Elizabeth Hansot have called the ‘administrative progressives’ – with the tools necessary to atomise, sequence and monitor every aspect of schooling (Tomlinson, 1997:372).

Frederick Taylor's work on scientific management, often referred to as Taylorism, also contributed to the views of administrative progressives. Taylor studied time and motion and his work helped to make industrial production more efficient and productive. These ideas were woven into the education system and no doubt were influential in developing standardised tests in the early 1900s (Allen, 1979: 1-4).

Discussions regarding the legacy and contributions of progressive ideologies continue today. Labaree (2005) argues that administrative progressives had the greatest influence on American schools in terms of designing curriculum and the organisational structure of schools. His view is that pedagogical progressivism is still embraced and retains its importance for those working in education departments in universities as well as those who teach in schools. However, Labaree argues that pedagogical progressives have not had a significant influence on educational practice:

What signs there are of student-centered instruction and discovery learning tend to be superficial or short-lived. We talk progressive but we rarely teach that way. In short, traditional methods of teaching and learning are in control of American education. The pedagogical progressives lost (Labaree, 2005: 278).

Labaree is correct in his observation that the administrative progressives have had significant influence in American schools. Much of that influence has been in the form of high-stakes testing. This has put tremendous pressure on schools and, in recent years, educators in several school districts have been involved in scandals over cheating on school achievement tests. This is a residual effect of an environment too focused on high-stakes testing as a measure of achievement and the imposition of harsh punitive measures against educators when test scores do not reach mandated proficiency levels.

Working in this type of system can be demoralising for educators. Some who support and administer punitive measures have been the focus of media attention and this has, at times, taken on the characteristics of a television reality show, like an education-related version of Donald Trump's *The Apprentice*. In the education version, teachers and principals are tasked with only one goal: to increase student test scores or be fired! For example, in 2008, Michelle Rhee, controversial education reformer and former chancellor of Washington DC schools, was featured on the cover of *Time* magazine. She was pictured stern-faced in a black pantsuit holding a broom. In the background is a blackboard and student desks. The caption "How to Fix America's Schools" is to the left of her image. The picture was representative of her brash brand of education reform, which involved making a clean sweep (firing), in large numbers, those whom she considered to be "ineffective" teachers and principals. Firings and school closings were done swiftly and unapologetically and Rhee even allowed herself to be filmed firing a principal for the 2010 documentary film *Waiting for Superman*, which highlighted the problems of the American public education system.

Rhee made numerous appearances on television shows speaking passionately and authoritatively about her reform mission. Some welcomed her swift and radical approach to reform. However, many others, including Diane Ravitch, a leading education historian, viewed her as a celebrity seeker and warned that her approach to education reform would produce "cheating, teaching to bad tests, institutionalized fraud, dumbing down of tests, and a narrowed curriculum" (Ravitch, 2011, n.p.). Rhee's approach was merely a continuation of the ideas of administrative progressives, with a narrow focus on test scores and punitive accountability measures. No one would argue that some firings are not necessary,

as is the case in other professions. However, if we want to retain talented people working in our schools, one of the main objectives should be to develop teachers and school leaders in a supportive environment.

As Labaree points out, pedagogical progressives in universities may profess the ideals of progressivism to teacher trainees. However, teachers who espouse these ideals find them difficult to implement in an education system with procedures and goals that are contradictory to progressive ideals. This negatively impacts how and what teachers teach. For example, some scholars have argued that the push to prepare students for high achievement on standardised tests has forced many teachers to lessen their use of student-centred teaching because they feel they must “teach to the test.” Author and lecturer Alfie Kohn commented on the unintended consequences of standardised testing:

Across the nation, schools under intense pressure to show better test results have allowed those tests to cannibalize the curriculum. Administrators have cut back or even eliminated vital parts of schooling: programs in the arts ... electives for high schoolers, class meetings (and other activities intended to promote social and moral learning), discussions about current events (since that material will not appear on the test)...and entire subject areas such as science (if the tests cover only language arts and math) (Kohn, 2001: 1).

As discussed, these unintended consequences greatly impact teachers’ work. Measures of success for schools, in many cases, have changed the very nature of teacher’s work, sometimes resulting in a “performance-oriented, transmission model of learning” for purposes of accountability (McNess, Broadfoot and Osborn, 2003: 243, 246).

Stephen Ball might characterise this as indicative of a culture of “performativity” which he describes as,

a technology, a culture and a mode of regulation that employs judgements, comparisons and displays as means of incentive, control,

attrition and change based on rewards and sanctions (both material and symbolic). The performances (of individual subjects or organizations) serve as measures of productivity or output, or displays of 'quality', or 'moments' of promotion or inspection. As such they stand for, encapsulate or represent the worth, quality or value of an individual or organization within a field of judgement" (Ball, 2003: 216).

Certainly this is the case when schools are designated as failing and must undergo restructuring or closure and teachers in these schools are branded as failures.

As discussed in McNess, Broadfoot and Osborn (2003: 249), this culture of performativity may hinder the more affective dimensions of the education process. This type of culture also stymies demonstrations of knowledge in forms other than standardised testing. However, if we are to develop students for a knowledge society, then it follows that we should also be developing a school culture, and an entire education system culture, that has characteristics of a more pedagogically progressive model. This view contrasts with Larabee's (2005) fatalistic view of the influence of pedagogical progressives in American schools.

As the controversy over high-stakes testing continues and calls for change and innovation in educational practices increase, some reformers are advancing a more pedagogically progressive education approach. Indeed, this is already happening in some schools. Ravitch (1983: 44) describes Deweyan ideals as democratic in that they call for a change in the social relationships between teachers and students, focusing more on developing a cooperative relationship and making the teacher less of an authority figure. Progressive education is more group-oriented, unlike the individualist competitive focus of the traditional model of education. Additionally, the learning experience is a more participatory process for students and there is a greater focus on students' needs and developing learning tasks that have real world relevance. These ideas and practices continue to shape

American schools, particularly New Tech schools, as will be illustrated in chapters 5 and 6.

In addition to problems associated with standardised testing, there are other criticisms and the calls for reform of the system continue. The following section explores the nature of those criticisms, which are focused on cultural and structural characteristics of the education system. These characteristics are viewed as remnants of an industrial age education model in need of reform.

2.3 Calls for Reform linked to the Culture of Public Education

Teachers and students who have participated in the U.S. public education system, specifically the high school system, will be familiar with the dominant cultural model of education. In addition to the high-stakes testing practices discussed in the previous section, the model also includes participation in age-based classes with a single teacher for various single-subject classes, classrooms with rows of neatly arranged desks, and bells to designate the beginning and end of class periods. They will also be familiar with a hierarchical school organisational structure that might include a principal, assistant principal(s), teachers, paraprofessionals, and counsellor(s). These are just a few of the structural and organisational characteristics that are part of the shared educational experiences of students and teachers in the U.S.

The education landscape also includes the cultural practices of students and educators. Historically, this has included a heavy dependence on lectures, textbooks and handouts for teaching and learning, as well as daily homework assignments. Other familiar daily routines and practices include student use of hall passes to leave the classroom for various reasons, such as restroom breaks or to obtain needed

items from school lockers. Additionally, there may not be much collaboration among students but rather a focus on producing one's own individual work, in line with more individualist ideals of American society. This lack of collaborative engagement may apply to teachers as well. Additionally, there may be some, but very limited, interaction with the larger community. Usually this interaction is connected with fieldtrips, work-study programs, after-school programs or occasional guest speakers.

There exists among participants in the public education system a shared understanding of the structures and practices described above. These structures and practices are part of the culture of education or the "grammar of education" as described by Tyack and Cuban (1995: 85).

The basic grammar of schooling, like the shape of classrooms, has remained remarkably stable over the decades. Little has changed in the ways that schools divide time and space, classify students and allocate them to classrooms, splinter knowledge into "subjects," and award grades and "credits" as evidence of learning.

Other scholars echo these sentiments. For example, Darling-Hammond (1995), referred to the U.S. education system as an impersonal factory-model system of education. In her critical description of the practice and structure of the model, she states,

Students move from one teacher to the next, from grade to grade, and from class period to class period, with little opportunity to become well known to any adults who can consider them as whole people or as developing intellects. Secondary school teachers may see 150 or more students a day. Teachers work in isolation from one another, stamping students with lessons. Students, too, tend to work alone and passively, listening to lectures, memorizing facts and algorithms, and engaging in independent work at their separate desks (Darling-Hammond, 1995: 154).

Somekh and Lewin also note that this type of structure, where students move frequently from one teacher to the next, is not conducive to building relationships

between students and teachers and that this de-personalises the education experience. They make the argument that the restrictive “rules and structures which reduce students’ freedom of action and ability to take responsibility” are “inherently oppressive” (Somekh and Lewin, 2008: 58).

Darling-Hammond might agree as she criticises this restrictive structure with its focus on rote learning, testing, and preparing students for the factory-model jobs of the early twentieth-century. She states, “We must rethink how schools are designed, how teaching and learning are pursued, and how resources are allocated” (Darling-Hammond, 1995: 153). She notes that features of successful schools include small size, strong relationships among and between staff and students, and teachers working collaboratively and having a voice in the school planning process.

Hargreaves (1994) adds to the sentiments stated above, drawing attention to the dynamic changes in society that affect education. He writes,

Schools and teachers are being affected more and more by the demands and contingencies of an increasingly complex and fast-paced postmodern world. Yet their response is often inappropriate or ineffective – leaving intact the systems and structures of the present, or retreating to comforting myths of the past (Hargreaves, 1994: 23).

Hargreaves examines education reforms with an understanding that it is the work of teachers that will determine the success or failure of reforms and that reform efforts must consider the needs of teachers and their development as professionals. He also writes about how teacher cultures can be shaped to include empowerment and more collaborative efforts. However, he notes that the existing highly bureaucratic structures make it difficult for these efforts to flourish.

It is not only scholars who are critical of the current model of education. Big business has tended to view schools as inefficient institutions failing to prepare students for the workforce. Schools are increasingly subject to the overlapping

influences of the economy, politics, business and industry. The influence of big business is of particular importance in a study of New Tech schools. The impetus for the development of the first New Technology High School came when members of the local business community met with district school officials to discuss how they could better prepare students to meet the needs of the new economy and, more specifically, the needs outlined by the local Economic Development Corporation.

A 2005 speech given by Bill Gates at the National Education Summit on High Schools further indicates the influence of the business community. Gates declared,

America's high schools are obsolete ... By obsolete, I mean that our high schools – even when they're working exactly as designed – cannot teach our kids what they need to know today. Training the workforce of tomorrow with the high schools of today is like trying to teach kids about today's computers on a 50-year-old mainframe. It's the wrong tool for the times. Our high schools were designed fifty years ago to meet the needs of another age (Gates, 2005, n.p.).

It is interesting to note Gates' choice of words. He describes American high schools as if they were machines, which is perhaps appropriate given the fact that he has made billions in the computer industry. However, schools are complex living communities of educators and learners, as pedagogical progressives would stress. The statement by Gates reflects central features of modern capitalist American culture in its emphasis on the business model and the framing of education as simply the preparation of workers for efficient integration into the workforce. As discussed earlier, certainly a goal of education is to prepare young people to earn a living, but it should not be the only focus.

It seems likely that John Dewey would also have taken issue with Gates' reductionist view. As Professor of Philosophy at the University of Michigan in 1893, Dewey stated,

If I were asked to name the most needed of all reforms in the spirit of education I should say: 'Cease conceiving of education as mere preparation for later life, and make of it the full meaning of the present life.' And to add that only in this case does it become truly a preparation for later life is not the paradox it seems (Dewey, 1893: 660).

In other words, consideration should be given to how we might make education an intrinsically rewarding experience with relevance for students' lives both now and in the future.

As discussed earlier, schools are subject to the influences of politics through laws that govern certain practices and mandate outcomes and also through the language and actions of political leaders. For example, at the 2010 State Educational Technology Directors Association Education Forum, the U.S. Secretary of Education, Arne Duncan stated that educators will need to,

rethink some basic assumptions about the use of time, the structure of the school day, and how we organize our students in their learning environment (Duncan, 2010b, n.p.).

However, these kinds of changes alone will not accomplish the goal of providing a better educational experience for students and this will not create conditions that better prepare them for college and careers. These are structural changes that do not get at the core of education. But they do raise questions about how teaching and learning could function differently with a restructured school day in which students are reorganised within the school. For example, would teachers have time to work collaboratively? Would two different subject area teachers teach classes together? Would students work in groups? The desired learning experiences, alongside consideration of what schools are for, need to be considered prior to making structural changes.

Real reform does not occur easily and it does not come as a result of laws, policy initiatives, business-backed initiatives, or mere changes in school structures. Real reform in schools has not materialised because the American public has deep-rooted “cultural constructions about what constitutes a ‘real school’” (Tyack and Cuban, 1995: 109 and Cuban, 2010, n.p.). The calls for change discussed in this section focus on changing certain structures within the education system as well as changing the teaching and learning process as pointed out by Darling-Hammond (1995: 153). These changes will require efforts aimed at reshaping the culture of education broadly as well as reshaping individual school cultures.

Another essential element of school reform is the integration of ICTs, which is deeply influenced by school culture. The integration process has been problematic in the U.S. and the following section sheds light on the issues.

2.4 ICTs as an Essential Element of School Reform

Central reform initiatives have adopted the view that changes in the teaching and learning process will include the integration of ICTs. The 1983 report *A Nation At Risk* includes a section of the report titled “Indicators of Risk” that highlights deficiencies in education in light of the changing technological needs of the U.S. and the increasing role of computers in various occupations as well as in everyday life. As discussed earlier in this chapter, the development of digital skills is seen as necessary to successfully compete in a knowledge economy. There is a long history of enthusiasm, assumptions and predictions claiming that ICTs will transform the learning process. The U.S. government and numerous private corporations have invested billions of dollars in funding for ICTs in K-12 education settings. According to a 2009 study by The National Center for Education Statistics (Gray, Thomas and

Lewis, 2010), 97% of U.S. public school teachers had computers in their classrooms and 93% of those computers were connected to the Internet. However, only 40% of teachers reported using computers often. This is consistent with other studies that indicate that ICTs, for a variety of reasons, have not been fully integrated into the education system (Cuban, 1986, 2003; Cuban, Kirkpatrick and Peck, 2001; Selwyn, 2002; Robertson, 2003, Somekh and Lewin, 2008). Some researchers have attributed this failure to the culture, organisation and social structure of public schools (Cuban 1993, Somekh, 2004; Ertmer and Ottenbreit-Leftwich 2010) and call for more research that examines the social and cultural aspects of ICT integration (Kerr, 1985; Selwyn, 2011).

This dimension of reform is particularly salient for this study given New Tech schools' use of ICTs as an integral part of the teaching and learning process. New Tech schools utilise ICTs to support project-based learning and the New Tech Network boasts the "seamless use of technology"⁸ in their schools. This study investigates that claim, as seamless integration is certainly not the reality in most schools and there is a long history of fervent enthusiasm and proclamations by those who believed that early forms of mass communication technologies would forever change the process of teaching and learning. Cuban (1986) chronicles the history of teacher use of radio, film, television and computers in U.S. classrooms, beginning in the early 1900s. In 1922, Thomas Edison proclaimed,

I believe that the motion picture is destined to revolutionize our educational system and that in a few years it will supplant largely, if not entirely, the use of textbooks (cited in Cuban, 1986: 9).

⁸ As stated on their website at <http://www.newtechnetwork.org/schools/types/ntn-high-schools>.

In 1932, Benjamin Darrow, founder and first director of the Ohio School of the Air expressed his vision for how radio would change the education process. He stated,

the central and dominant aim of education by radio is to bring the world to the classroom, to make universally available the services of the finest teachers, the inspiration of the greatest leaders ... and unfolding world events which through the radio may come as a vibrant and challenging textbook of the air (Darrow, 1932: 79).

In 1984, echoing Edison and Darrow, MIT professor Seymour Papert famously proclaimed,

There won't be schools in the future ... I think the computer will blow up the school. That is, the school defined as something where there are classes, teachers running exams, people structured in groups by age, following a curriculum – all of that. The whole system is based on a set of structural concepts that are incompatible with the presence of a computer (Papert, 1984: 38).

The three statements above are problematic because they seem to reflect a technological determinist view of the role of machines in the education process. It seems as if the mere presence of the technology is expected to transform education. Oliver (2011: 374) provides a basic definition of technological determinism, which refers to the theory that a society's technology determines its social and cultural patterns. Contrary to the technological determinist view, Somekh and Lewin argue that technology use or lack thereof,

has a systemic origin, being actively produced by the context of schooling and the education system. Schools as a system of rules and structures mediate students' and teachers' use of technology and often reduce powerful ICT tools to mere imitations of traditional resources (Somekh and Lewin, 2008: 60).

I agree with this argument. The impact of the technology is mediated by the social and cultural context in which it exists and also by the affordances perceived by the users. In chapters 5 and 6, I illustrate how pedagogy, a particular value system, and

structures shape the use of ICTs in ways that can be considered non-traditional in an education context. This is also discussed further in chapter 7.

The perspectives of Edison, Darrow and Papert on the potential of technology in schools do not convey an understanding of issues related to context, including the shared cultural meanings, perceived affordances and social practices of the educators and students who use the tools. Each statement points to how the technology will revolutionise the education process, making the technology the agent of social change instead of considering how schools, as social organisations, influence the ways in which the technology is utilised.

Beliefs about the benefits of ICT use as essential in improving teaching and learning and preparing students to compete in the global economy remain strong. Education policy reflects these beliefs. The *1994 Improving America's Schools Act* is inclusive of *The Technology for Education Act of 1994*, which conveys beliefs about the potential benefits of technology in education:

Technology can produce far greater opportunities for all students to learn to high standards, promote efficiency and effectiveness in education, and help propel our Nation's school systems into very immediate and dramatic reform, without which our Nation will not meet the National Education Goals by the target year 2000 (U.S. Department of Education, 1994, n.p.).

In terms of the history of education reform, this statement reflects the views of the “efficiency-minded or administrative progressives” discussed earlier in this chapter. Their main focus was on measuring skills and increasing efficiency and productivity in schools. This statement promotes the notion that technology can produce the radical changes desired in the education system. It echoes the previously mentioned perspectives of Edison, Darrow and Papert in its technological determinist viewpoint. The statement also suggests that high standards, efficiency, and

effectiveness powered by technology are the elements needed to ensure swift and radical reform. These anticipated reforms have not materialised.

The Enhancing Education through Technology Act of 2001 provides assistance to States for the “effective” use of technology in elementary and secondary schools. It also provides assistance for access to technology, technology infrastructure, professional development and evaluation of programs. The main goals of this Act are to improve student achievement through the use of technology, to ensure technological literacy for all students by the end of grade 8, and to support the “effective” use of technology through research-based methods (U.S. Department of Education, 2001, n.p.). Significant progress has been made with providing technology access, infrastructure and professional development programs. However, as noted earlier, a disconnect remains between teacher access and actual usage.

In 2010, under the administration of President Barack Obama, Arne Duncan, Secretary of Education, discussed the *U.S. National Education Technology Plan*. He stated that the new plan “presents a model of 21st century learning powered by technology” and the plan calls for a “redesigning of education in America” (Duncan, 2010b, n.p.).

The degree to which teachers work toward the goals stated in the *U.S. National Education Technology Plan* varies significantly. It has been my experience as a teacher and technology curriculum coordinator at several U.S. schools that, for a number of reasons, few educators at the local school level actually review the Department of Education Technology Plan or the National Educational Technology Standards. These documents are most likely to be reviewed by technology curriculum coordinators, computer applications teachers and others who may be

responsible for providing technology education and support. Unfortunately, technology plans do not get at the core of the problem behind the lack of ICT integration. I argue that school culture and pedagogy have to necessitate the use of ICTs if they are to be more fully integrated into the education process.

Fullan (2011: 5) might suggest that efficiency and quality control elements are the “wrong main drivers” for reform efforts. He argues that a change in “values, norms, skills, practices [and] relationships” should be the main drivers of reform efforts. I hold the view, along with other scholars to be discussed, that the “new way” of educating will require a radical change in school culture. As such, I have chosen to frame this study using a sociocultural perspective, examining the culture of New Tech high schools and its contextualization within broader cultural ideologies, social patterns and influences. This sociocultural approach balances an anthropological focus on culture with a sociological focus on social relations and social organisation.

New Tech’s understanding of culture is very much focused on school culture and shared values and practices within the schools. It is more of a pragmatic focus and is also used as a fidelity measure in comparison to the New Tech ideal. However, in my analysis, I use the term culture in a more anthropological manner that encompasses not only local patterns of interpretation and action but also their contextualisation within social forces and broad cultural orientations such as individualism, the emergence of the networked knowledge society, and New Tech’s corporate-influenced history. I also use it as an analytical tool to explore elements of New Tech culture that reflect or diverge from traditional educational culture and practices. The following section more fully details my use and understanding of the culture concept for this study.

2.5 The Culture Concept

There is a significant body of literature on the concept of culture, which includes studies on school culture. It is generally agreed that the concept of culture originated in the field of anthropology. However, those within the field of anthropology, as well as scholars from other disciplines, have offered a variety of definitions for culture and related concepts. In this section, I discuss how I understand and utilise the concept of culture, including the associated concepts enculturation and socialisation, in the context of this study. In this study, I define “culture” as

systems of shared ideas, systems of concepts and rules and meanings that underlie and are expressed in the ways that human beings live (Keesing and Strathern, 1998: 16).

Some may argue that this definition depicts culture as static. However, my understanding is that the use of the term “system” does not imply an unchanging structure. On the contrary, “systems” should be understood as dynamic and culture is a dynamic process (Foster, Lewis and Onafowora, 2003: 262; Haviland et al., 2012: 170). Educational researchers Stoll and Fink (1989: 83) argue that,

Because culture is created by its participants, it inevitably changes as participants change, although it can also be a stabilizing force, particularly for longer-standing members. It presents, therefore, the paradox of both being static and dynamic.

I agree with Stoll and Fink that culture is a stabilising force. However, as I have argued earlier, the use of the word “static,” which appears in this definition, implies that culture is fixed and motionless. I am more inclined to use the phrase “resistant to change” in referring to certain aspects of culture. Resistant implies that changes in culture may be challenging but possible.

I see the Keesing and Strathern definition of culture as useful because it conveys the fact that certain aspects of culture become visible as they are expressed in practices and in cultural products (going against the materialist critique that culture cannot be seen and is thus unimportant). During my fieldwork, I observed many visible signs of culture (e.g. school rituals, shared teaching methods, symbols, signs, and mission statements). Other aspects of culture are deeper and include the underlying (tacit) meanings behind what is visible.

Enculturation and Socialisation

Processes of cultural transmission and how a person acquires and internalises culture, as well as how people learn to organise and interact within social groups, are questions tackled by understanding the processes of enculturation and socialisation. I examine the enculturation process to understand how participants come to internalise the New Tech values and ways of teaching and learning. I also examine the process of socialisation to understand how interaction among groups within these schools facilitates behaviours and practices that coincide with the New Tech model of education.

Like culture, the meaning of the term enculturation has also been the subject of much debate among scholars. In particular, there has been some controversy regarding the difference between enculturation and socialisation, so I will discuss some of the views expressed within the academic literature. Sometimes the two terms are used synonymously, as illustrated in an entry in the glossary of the *Routledge Encyclopedia of Social and Cultural Anthropology*. The entry states that enculturation is “the process of acquiring a culture. The term is more or less synonymous with socialisation” (Barnard and Spencer, 2010: 764). However,

stating that the two are “more or less synonymous” leaves one wondering about the differences between the terms and if the differences matter. I see the two as overlapping terms and will explain why.

Spindler (1974: 280-282), wrote about the process of cultural transmission, one aspect of the process of enculturation. He studied child-rearing activities among the Palauans of Micronesia to understand how these activities facilitated cultural transmission. He determined that parents utilised culturally patterned ways of teaching children how to act appropriately and these culturally patterned activities reflect aspects of the wider context of Palauan society. Although Spindler seems to focus on the parents’ behaviour as transmitters of culture, he does note the actions of the child and possible ways that the child may be interpreting the parents’ behaviour. Recipients’ interpretations are important to the enculturation process, as is expressed by Valsiner (2007: 35-36), who argues that cultural transfer is a bidirectional process. He notes that when cultural knowledge is being transmitted from one person to the next, the recipient analyses and refashions it. The way in which the original message gets internalised may vary depending on the individual. This is what Shore (1991) refers to as the “twice-born” character of cultural meaning.

In addition to cultural transfer between parent and child, cultural transfer also occurs within formal education institutions like schools. For example, Woronov (2004) exemplifies this in her article on the education of migrant children in Beijing. The formal education process reproduces Chinese values of patriotism and loyalty as well as the role of Beijing as the moral centre of the Chinese state. For my research in New Tech schools, I have utilised participant interviews as well as participant observation, classroom observations and school documents to

understand what values are being transmitted, the processes of transmission and participants' acquisition in terms of their communications and their actions.

Poole (1994: 832-834) views socialisation as a process that involves interaction with others as a means of learning how to act appropriately within a particular context. Whereas studies of enculturation focus on a participant's acquisition and understanding of cultural knowledge, studies of socialisation deal with the processes of social interaction. Socialisation is about

the character of the situations and events in which learning occurs [and] the organization of the interactive processes that promote and facilitate learning of different kinds and significance (Poole, 1994: 832).

For Poole, socialisation and enculturation are complimentary ways of discussing learning in the local context. Understanding of the enculturation process requires focus on people within context as well as understanding the context within which social interaction occurs.

LeVine (1982: 62) writes that the term socialisation has been used differently within various disciplines. For example, he explains that cultural anthropologists have used the term enculturation instead of socialisation because of its emphasis on "acquiring, incorporating, or internalizing culture." The process of internalisation is a complex one and Poole (1994: 835), discussing work by Melford Spiro, notes that the internalisation of cultural knowledge varies depending on its personal significance to each individual. For example, at a certain level, internalisation can merely influence behaviour, as in the "performativity" critiqued by Ball (2003). At another level, personal significance is so deep that the cultural knowledge impacts "a person's perception, understanding, affectivity, evaluation, and motivation" (Poole, 1994: 835). In yet other instances, cultural knowledge is understood but

may not influence behaviour at all. These levels of enculturation have clear implications for school reform, in which a teacher's pre-existing teaching philosophy may or may not be congruent with a particular new model of education and the values and practices of that model may or may not be internalised at a deep level. Levels of enculturation foreground questions about power dynamics when teaching and learning practices are expected to change even if one does not necessarily embrace the value system that accompanies the reform.

My understanding of the authors discussed above leads me to conclude that enculturation and socialisation can be seen as overlapping concepts or two sides of the same coin. An examination of enculturation involves an understanding of how members within a certain context acquire and internalise cultural knowledge. And this process requires a focus on what Geertz (1974) referred to as "the native's point of view." Socialisation has been described in a way that focuses more on organisation and interaction within social groups and how participants learn to behave appropriately within those groups. Both concepts will be used in chapters 5, 6, and 7 to describe and discuss the findings of this study.

The following section further explores culture in the context of education, with a focus on some of the academic debates on the concept. I discuss the literature on school culture and its significance for reform efforts.

2.6 School Culture

Many educational scholars (Hargreaves 1995; Furlong 2000; Maslowski 2006) agree that the concept of school culture can be traced back to Waller's 1932 book *The Sociology of Teaching*. Waller describes schools as social organisms, each having their own political order, structure of social relationships, and distinct

culture (Waller, 1932: 6-7). There are certain rituals, relationships, traditions, and ceremonies that constitute cultural elements of the school and by studying these and other activities or “culture patterns,” one gains important insights into meaningful behaviour in schools and how behaviour reflects broader cultural orientations (Waller, 1932: 111-112). Additionally, Waller suggests that one of the important roles of U.S. schools is to transmit culture or, more specifically, to “Americanize” students. One of the goals of Americanizing students is to provide them with an education that enables the nation to achieve economic success and global competitiveness. Certainly education has other goals as discussed earlier in this chapter. However, economic goals are those most often emphasised by government officials.

In a discussion about anthropological views on culture, Erickson (1987: 12) states,

Usually anthropologists have thought of culture as a system of ordinary, taken-for-granted meanings and symbols with both explicit and implicit content that is, deliberately and nondeliberately, learned and shared among members of a naturally bounded social group.

I agree with certain aspects of Erickson’s definition. For example, as discussed earlier, certain aspects of culture are obvious to the observer while other aspects are tacit. However, it is my opinion that this definition is missing certain important elements of culture. For example, anthropological understandings of culture would also include cultural practices and artefacts or tools that are transmitted to members of the society. The roots of this view go back at least to Redfield (1941: 132-133), who described culture as “conventional understandings made manifest in act and artefact.” In relation to Keesing and Strathern’s (1998: 16) definition, acts and artefacts are aspects of “the ways that human beings live” through which

cultural ideas are expressed. My study of New Tech school cultures seeks to understand the meanings behind the everyday practices (the acts) which include the use of a variety of artefacts, particularly digital tools.

The Erickson definition also refers to the notion of the geographically “bounded” nature of social groups. I would argue that, in this network society, we could say that, in cases where internet connectivity is available, geographical boundaries are now permeable, given the global connections made possible by the use of ICTs. The notions of permeable boundaries, expanded social groups and affordances of ICTs are discussed in relation to New Tech schools in chapter 7.

Erickson (1987: 13) discusses the debate between anthropologists and sociologists regarding whether the anthropological concept of culture is adequate to explain “observable variations in the actions, beliefs, and sentiments of individuals and groups.” Wallace (2009: 252) addresses this issue, to some extent, by arguing for an “organization of diversity” approach to culture, which takes into account the diversity of beliefs and values within groups. Culture can be seen not simply as reinforcing uniformity but as a way of organising diversity. For example, teachers in U.S. public schools have a shared understanding of testing (non-standardised) as a means for assessment. Yet there are a diversity of ways in which teachers choose to test students. The knowledge and understanding of how one might develop and administer tests varies. I will share a more concrete example of this. When I was working as a student teacher, my mentor introduced me to the idea of debatable exams. This type of exam is designed with true/false, multiple choice and essay questions. My mentor would grade these exams, and then allow students the opportunity to participate in a class debate to defend any answers that he deemed were incorrect. If students were able to make a strong and convincing case for their

answers, the grade would be changed accordingly. This was the norm for all of my mentor's classes and an important element of that particular classroom culture. I must note that these kinds of exams may not be well suited for all students but I use it here to illustrate a point.

While still a student teacher, I created a debatable exam for my students and the debate was scheduled on a day when my university supervisor, a much older gentleman, was scheduled to observe my teaching. After this lively session, he looked puzzled and said, "the students were arguing with you." I found it interesting that he characterised students' lively but respectful responses as argumentative. I suspect this was connected to his own understanding of the concept of "testing" as well as his understanding of teacher-student relationships and issues of power. I responded by saying students weren't arguing, but debating. I also made a point to mention that students were using critical thinking skills and were engaged and excited about the process of learning. He then asked, "So that's what you wanted them to do?" Very pleased with how the process went, I replied, "Yes, wasn't it exciting?" He seemed satisfied that I was indeed expecting students to debate, although it was obvious, from his comments, tone and facial expressions, that his understanding of testing and teacher-student relationships was quite different from my own. We both had a shared cultural understanding of testing as a concept as well as the notion of respectful teacher-student relationships. However, we had different ideas about what these concepts should look like in practice. These differences illustrate Wallace's argument that culture includes not only replication of uniformity but also organization of diversity.

To further illustrate Wallace's point, Shore (1991: 18), in a discussion of Samoan mental models of power, writes that, although mental models or schema are

shared, this “does not preclude considerable variation in how individuals use this concept in practice.” The main point is that, within a particular cultural context, for example a school, understandings of a concept can be shared, yet in practice may be individualized. So an analysis of shared culture does not imply uniformity in practice.

As noted in chapter 1, many scholars argue that an understanding of school culture is necessary when working toward school effectiveness and school improvement. This involves a focused effort on carefully nurturing a school culture that can shape school improvement beyond mere academic performance to include improved social and emotional results (Deal and Peterson, 2009: 4). In other studies, the role of school leaders has been shown to be an important factor in the process of developing a positive school culture (Evans, 1996; Barth, 2002; Deal and Peterson, 2009). For example, Barth (2002) suggests that school leaders need to understand the cultural elements within their schools and then work collaboratively with stakeholders to bring about positive cultural changes. Additionally, teachers bring their own sets of beliefs and values to complex school cultures and it is important to understand these values and beliefs, as this understanding is “fundamental in moving toward innovation and change” (Furlong, 2000: 71). In chapter 6, I illustrate how teacher beliefs and a variety of other factors impact the implementation of the New Tech model at Midwest New Tech.

Even though school culture has emerged as an important element in facilitating or impeding reform efforts, reformers do not always consider it as part of the equation when working to implement reform. The notion that reform simply involves policy implementation has been criticised, with the main focus shifted to the central importance of culture in the process of reform:

Reform is not putting into place the latest policy. It means changing the cultures of the classrooms, schools, districts, universities, and so on (Fullan and Stiegelbauer, 1991: xii).

Fullan (2011) further argues that reforms with a primary focus on changing structures and procedures are not successful. This resonates with the findings of scholars who argue that school reform efforts often fail because of a lack of understanding of the complex social and cultural realities of life in schools (Sarason, 1990, 1996; Tyack and Cuban, 1995; Cuban, 2013).

Fullan makes the case that reforms should encompass whole systems, “a whole state, province, region or entire country” (Fullan, 2011: 3). He explains that many leaders have focused on accountability, individual teacher and leadership quality, technology, and fragmented strategies as the main drivers of reform efforts. As discussed earlier in this chapter, current systems of accountability encompass a heavy reliance on test results as a measure of teacher effectiveness. Additionally, the focus on individual teacher and leader quality reflects the broad individualist orientation of American culture instead of working to improve the system or develop the capacity of the group.

Regarding the integration of ICTs, the enthusiasm has been to push the integration as a “technical fix” (Robbins and Webster, 1989) without significant attention being paid to pedagogy leading the way for technology use. Fullan (2011: 3) suggests that system-wide strategies are needed instead of various disjointed solutions and that there needs to be a change in the culture of school systems. By culture he means the “values, norms, skills, practices and relationships” within a school system (Fullan, 2011: 5). He presents a set of four drivers that he believes should take the lead in efforts to change school culture. Those four drivers are “capacity building, group work, instruction, and systemic solutions” (Fullan, 2011:

5). These drivers, according to Fullan, need to be systemic, “interconnected, and required and supported,” by an entire system to be successful. A discussion of capacity building as well as group work and instruction in New Tech schools are illustrated in chapters 5 and 6 and discussed further in chapter 7 and the notion of system-wide change is addressed in chapter 8.

Fullan’s view is similar to that of Sarason (1996: 386), who makes the case that, because learning is a social process, a more “interconnected” or collaborative school environment in which each person’s ideas and individuality support the other members can lead to more productive learning. He advocates this for both teachers and students and these ideas are rooted in Vygotsky’s (1962) work on how knowledge construction occurs in interaction with others.

The vision of reform discussed here entails a reshaping of the culture of education. It involves a shift in thinking about the purpose and goals of the education process, the practices, and the relationships within the system.

2.7 Chapter Summary

Education reform that prepares students for participation in the knowledge society is being espoused by political leaders, business leaders, and academics. However, a contradiction exists, as the strong reliance on standardised testing as a measure of achievement and accountability can undermine the development of both deeper learning and 21st century learning competencies. These include the ability to transfer and apply knowledge, using critical thinking and problem-solving skills in the process of applying academic content in real-world situations. Other skills include being a self-directed learner focused on achieving goals and working collaboratively with others to achieve goals. In this view, education should

encompass efforts towards enhancing students' confidence in their abilities to achieve academic goals. Additionally, students should develop information and media literacy skills to evaluate a variety of information sources and create projects that showcase their knowledge. They should also be able to communicate their knowledge to an authentic audience. There are a variety of approaches aimed at their development and it is important to study them to understand how they impact teachers and students and how they shape the education process.

Many of the nation's reform efforts have been based on policy initiatives that call for more testing, changes in curriculum, changes in school structures, and the integration of ICTs. While some of these changes may be necessary, they do not constitute "real" reform. As Fullan (2011) argues, real reform requires a change in the culture of education. But what does that process of culture change look like on the ground? That is the focus of this study, which will illustrate, through ethnographic fieldwork, what actually happens in two schools implementing a reform effort that focuses on changing school culture. These schools work to develop educational practices that move away from more traditional models of education in order to develop deeper learning competencies using a variety of assessments to gauge student progress. They integrate ICTs to support the learning approach and focus on the affective elements of the education process. Many New Tech practices resemble those espoused by pedagogical progressives. This is done in spite of continued policy initiatives making testing, curriculum, school structure and ICTs the main focus.

The following chapter provides a discussion and justification for adopting an ethnographic multisite case study design for this thesis. I detail my understanding of the ethnographic process and also discuss my research methods, which included

interviewing and participant observation. I discuss the development of relationships in the field which helped me to gain an understanding of the experiences and practices of school members as they work through the process of implementing and maintaining the New Tech model. In this chapter, I also discuss the selection of sites and important aspects of my fieldwork and data collection processes as well as the benefits and challenges of the research approach.

Chapter 3

An Ethnographic Case Study Approach

3.1 Research Design

I used an ethnographic multisite case study design for this study to produce “thick descriptions” (Geertz, 1973: 6) of two New Tech schools, which were the core focus for this thesis, and two off-site summer training sessions. Thick description is more than simply describing what is happening in a context. It involves an understanding of meanings and motivations and “highly flexible approaches to interpretation of that data and the communication of ideas” (Frankham and MacRae, 2011: 35). This is well-suited to an examination of how the implementation of the New Tech model shapes school culture at each site.

According to Robson and McCartan (2016: 80), case studies provide “detailed, intensive knowledge ... of a small number of related cases” in context using a variety of data collection methods. Chadderton and Torrance (2011: 53) note that case studies “seek to identify and describe before trying to analyse and theorize” and Stake (1978: 7) notes the importance of providing rich descriptions of a variety of observed phenomena. Case studies, according to Stake, take an experiential and empathic approach to the comprehension of social problems and emphasise an understanding of the case rather than testing hypotheses. An evocative narrative writing style is used, often with verbatim quotations. Case studies examine:

both what is common and what is particular about the case, the end results being generally something unique (Stake, 1994:238).

Additionally, case study researchers work to:

identify the various interactive processes at work to show how they affect the implementation of systems and influence the way an organization functions (Bell, 2005:10).

Bell's orientation to case study research resonates with the goals of the present study, in which I seek to describe and analyse the "on-the-ground" interactive processes involved in the implementation of the New Tech model and the shaping of school culture. The experiential and empathetic approach to case studies that I adopt, following Stake, is very compatible with an ethnographic approach and is appropriate to address the following research questions.

- How is school culture shaped by the implementation of the New Tech model at each site?

In addition to this overarching question, I use several more concrete subquestions to explore different aspects of the more abstract main question. These questions are:

- What are the cultural ideals of the New Tech Network?
- How are members enculturated into the New Tech model of education?
- How do teachers, students and other stakeholders at each site describe their experiences working within the New Tech model (including their engagement with ICTs)?
- What challenges arise in the process of implementing the model at each site?

Historically, ethnographic methods developed in the field of anthropology before spreading to sociology and a variety of other disciplines. Many early anthropologists focused specifically on studying the cultures of people from far away, unfamiliar lands. For example, Bronisaw Malinowski (1922) conducted studies in the Trobriand Islands, Franz Boas (1975) studied the Native American tribes of the northwest and Margaret Mead (1928) conducted her studies in Samoa. In the early 1950s ethnographic studies of schools began to emerge. Some of the first, and most familiar, anthropologists and sociologists to write educational

ethnographies were George and Louise Spindler (2000) in the U.S. and David Hargreaves (1967), Colin Lacey (1970), and Paul Willis (1977) in the United Kingdom.

Key Aspects of Ethnographic Studies

Ethnographic researchers do not agree on one definitive definition for ethnography. This is due in part to ethnography “representing both a process and a product” (Agar, 1980: 1). Ethnographers have various understandings about the research process and much has been written about how to do ethnography (Spindler, 1982; Campbell-Galman, 2007; Walford, 2007; Campbell and Lassiter, 2015). However, there are several key aspects of ethnographic studies. Bryman (2001: x) suggests that ethnographers embed themselves into particular settings and collect descriptive data which they use to understand the culture of a particular group. One of the main aims of ethnographic research is to understand and convey the culturally situated perspectives of the research participants. Another aim is to make the findings relevant and understandable for the intended audience.

In addition to understanding the perspectives of the participants, it is also important to recognise that schools are part of a broader cultural context and thereby influenced by that broader context. However, schools also have a unique local school culture. Ogbu (1981) notes the importance of examining the micro-culture of schools alongside the social, political, and economic aspects of the macro-culture to understand how these aspects shape the education process in schools. Indeed, this thesis examines how influences of the macro-culture have spawned a model of education that some believe is more suited for the 21st century and beyond.

Participant observation is one of the main methods used by ethnographers and Clifford sees the use of participant observation as a way to understand micro-culture as well as the larger context within which the micro-culture is situated. He states that participant observations,

serve as shorthand for a continuous tacking between the “inside” and “outside” of events: on the one hand grasping the sense of specific occurrences and gestures empathetically, on the other stepping back to situate these meanings in wider contexts (Clifford, 1988: 34).

The discussion in chapter 2 reveals how a combination of social, political and economic factors are impinging upon schools to push forward a reform agenda touted as beneficial for students as well as for society as a whole. Findings derived from my study of school culture within New Tech schools will highlight the macro-level factors influencing these schools and their problematic aspects.

The use of participant observation was crucial for my research for a variety of other reasons. For example, Eisenhart emphasises the importance of this method saying,

To be directly involved in the activities of people still seems to be the best method we have for learning about the meaning of things to the people we hope to understand. Only by watching carefully what people do and say, following their example and slowly becoming part of their groups, activities, conversations, and connections do we stand some chance of grasping what is meaningful to them (Eisenhart, 2001: 23).

Ethnographers usually spend a significant amount of time as participant observers and one must consider how much time is sufficient to observe, participate and develop the relationships necessary to gain an understanding of a social group and its broader context. An account of the time I spent in each school is detailed later in this chapter. I found that direct involvement over this extended period of time facilitated a reduction in what Bernard (1988: 150) refers to as reactivity, the

process in which people alter their behaviour when they know they are being studied. Bernard argues that long term participant observation allows the observer's presence to become familiar and people's behaviour to resume its usual form. I found that teachers were more relaxed the longer I was around and the more I interacted with them. For example, after the first few weeks, conversations in the teachers' lounge did not seem as guarded and teachers generally became more comfortable revealing a variety of thoughts and feelings about their experiences. My involvement as a participant observer and the development of relationships in the field are discussed in section 3.3 of this chapter.

Ethnographic research and theory building

Walford (2001: 10) notes that in ethnographic research, theory building is a process and develops as the research progresses. Additionally, Creswell (2009: 8), in a discussion of social constructivist views on research, states that researchers do not necessarily start with a particular theory but instead meanings and theories emerge from the data. I chose to frame this study using a sociocultural perspective, examining the culture of New Tech High Schools and its contextualization within broader cultural ideologies, social patterns and influences. As discussed in chapter 1, I determined that this framework was appropriate after reading the available literature and reviewing information about New Tech schools. Identifying a possible framework prior to conducting fieldwork coincides with Schensul, Schensul, and LeCompte's (2013: 83) suggestion that "the first job of any ethnographer is to organize his or her questions and hunches into an initial or formative theory that will guide first the collection, and later, the analysis of data." My initial observations in the schools confirmed that I had chosen a suitable framework.

Hammersley and Atkinson (2007: 159) suggest that ethnographies should incorporate more than one theoretical framework and these frameworks become apparent through an iterative process of “going back and forth between ideas and data.” Additional theoretical concepts that I have used to make sense of the findings are discussed in chapter 7 of this thesis. Further clarification regarding my main research question developed during my time in the field. Originally this question focused on understanding how school culture shapes the use of ICTs in New Tech schools. The use of ICTs is still an important aspect of this study, as they are an essential element of New Tech school culture. However, as I spent more time in these schools, it became evident that there were numerous cultural elements that underpin how a host of activities are conducted in New Tech school settings and a more encompassing picture began to emerge.

During an interview with a teacher at Midwest High, part of his response to one of my questions about ICT use was, “It’s not about the technology, it’s about the culture.” I argue that the two are intertwined, as there are specific beliefs and values that underpin the use of technology in these schools. However, this teacher placed the emphasis on the culture. I continued to reflect on this statement as I observed classes and interviewed participants. New Tech schools are particularly interesting because of the focus on “culture-building” and the deliberate efforts to make the implicit aspects of culture explicit. This idea of “culture-building” relates closely to the work of Fullan (2011) discussed in chapter 2. He argues that developing school culture should be what he terms the “main driver” behind school reform efforts. What has emerged during my time in New Tech schools is the larger story of how the implementation of the model shapes local school culture. The complexity of this

process and the associated tensions and conflicts are illustrated and discussed in chapters 5, 6, and 7.

Selection of Sites and Access

Schensul, Schensul, and LeCompte (2013: 43) present a variety of factors for consideration when selecting fieldsites. Two of those factors are the interests of the researcher and any possible constraints that potential participants may impose on the research. As will be discussed in section 3.4 of this chapter, my personal interests and history as an educator played a major role in determining my fieldsites. Additionally, the participants were open to having a researcher on site and there were no constraints imposed upon the research.

Walford (2001: 151) provides an additional consideration. He cautions that researchers should avoid choosing sites for comparative case studies and ethnographic research simply based on their ability to easily gain access. He believes this is problematic, as site selection should have some “theoretical objectives.” He suggests one objective might be when “the focus of interest is so important that it is sufficient to be able to show that particular events occurred in any school (Walford, 2001: 156). He gives an example of racist incidents within a school as an important and significant finding. He continues, suggesting that a second objective might be if a case is significant due to policy development. As discussed in chapter 1, one of the reasons for choosing New Tech schools was because it was important to investigate the professed shaping of culture in these schools and the broader issues around education reform efforts and how they impact the lives of teachers and students.

Additional factors, including diversity based on geographic location, length of time as a New Tech school, level of diversity of the student population, and socioeconomic status were considered for choosing my two fieldsites. It was important to study two schools that were significantly different from each other to understand how the implementation of the New Tech model might vary in diverse settings. Another element that factored into my choice of schools and research focus was that some scholars have criticised what they view as an overrepresentation, in the literature on educational technology, of studies of “model schools,” without adequate consideration of the larger social context of the schools. For example, Selwyn advocates for a more critical approach that,

attempts to examine the use of technology in educational settings from the perspectives of *all* of the various contexts that shape and define educational technology – from the concerns of government and industry, to the concerns of the classroom and the home (Selwyn, 2010: 70).

One of the schools in my study is a model school. However, it is important to the study because the New Tech model has been practiced there for over 10 years. The second school, my main fieldsite, offers balance to the research as it is significantly different in terms of the economic status of the student population and its shorter length of time as a New Tech school. As both Selwyn (2010) and Ogbu (1981) recommend, I examine the various contexts that influence both schools.

My first New Tech contact was made when I emailed Lydia Dobyns, the President of the New Tech Network, to ask about the possibility of conducting research in the schools. My request was forwarded to their research consultant, an ethnographer who had conducted a study of alumni of New Tech schools and their views on how their educational experience prepared them for college and careers. Given the fact that one of my first contacts was himself an ethnographer, there was a

good level of understanding of the nature of my project from the beginning. The process of gaining permission for access to the schools involved a review of my proposal, conference calls and emails between myself, the research consultant, the Data Coordinator, and the Director of Innovation and Design. They informed me from the beginning that the New Tech Network does not manage the schools, so individual school leaders would need to consent to having me conduct research.

The Director of Innovation and Design initially contacted schools on my behalf and I was in contact with the principals of these schools, sometimes referred to as New Tech Directors, via phone and email. Two schools, which I will refer to as Pacific Coast New Tech High School and Midwest New Tech High School, both public non-charter schools, agreed to participate in the research.

Pacific Coast New Technology High School has practiced the model for over 10 years. The school serves approximately 400 students in grades 9 through 12 (ages 13-18) and is located in a middle-class community in the Western U.S. with a number of very successful businesses. The student population is 48% White, 35% Latino, 6% Biracial, 4% Black, 4% Pacific Islander, and 2% Asian and approximately 33% of students are eligible for free or reduced cost lunch. The teacher to student ratio is 23 to 1 and for the school year 2010/2011, Pacific Coast New Tech had a 98% graduation rate.

Midwest New Tech is located in an economically disadvantaged area in a Midwestern U.S. city. The school was established in the 1950s and initiated the process of becoming a New Tech school in 2010. This school was facing serious academic challenges related to low standardised test scores for students. Test scores have risen. However, it is unclear whether this is the result of New Tech strategies or a combination of other factors. The school serves approximately 649

students in grades 9 through 12 (ages 13-18). It has an ethnically diverse student population that is 52% White, 20% Black, 19% Latino, and 8% multiracial.

Approximately 90% of students are eligible for free or reduced cost lunch. For the school year 2010/2011, Midwest New Tech had an 80% graduation rate. This school is classified as a “high-need” school. *The No Child Left Behind Act of 2001* defines a high-need school as one that,

is located in an area in which the percentage of students from families with incomes below the poverty line is 30 percent or more; or (i) is located in an area with a high percentage of out-of-field teachers, as defined in section 2102; (ii) is within the top quartile of elementary schools and secondary schools statewide, as ranked by the number of unfilled, available teacher positions at the schools; (iii) is located in an area in which there is a high teacher turnover rate; or (iv) is located in an area in which there is a high percentage of teachers who are not certified or licensed (U.S. Department of Education, 2001, n.p.).

The ratio of students to teachers at Midwest High is 18 to 1 while the ratio of students to teachers at Pacific Coast High is 23 to 1. However, the total student population at Pacific Coast is smaller. The lower ratio at Midwest High may be related to its status as a high-need school.

The principals at each school site informed teachers that I would be on campus for an extended period of time and that I would be visiting their classrooms. Initially, I introduced myself to individual teachers and asked if I could observe their classes. Hammersley and Atkinson (2007: 61) note that gaining access is not a one-time occurrence but that access will often need to be negotiated with various gatekeepers throughout the research process. I was fortunate in that most of the teachers I met allowed me to visit their classes without restrictions. However, there were two teachers from Midwest New Tech who requested that I visit specific classes. One invited me to observe an honours class. I got the impression that she was not comfortable with me visiting some of her other classes where student

behaviour was more of an issue. A second teacher also invited me to visit a class during a specific time period. These cases were the rare exceptions.

3.2 Field Methods

I have discussed some of the benefits of participant observation to examine both the macro and micro culture of schools. Additional reasons for utilising ethnographic methods include their ability to represent the voices of research participants and their sociocultural contexts in a uniquely valid way. It preserves the data's contextualization within participant narratives, metaphors, and personal experiences. It thus makes the everyday activities of the participants comprehensible in terms of local shared understandings. For this reason, in my approach to understanding school culture and the activities of New Tech teachers and students, I used ethnographic participant observation and interviewing to construct an understanding of the "native's point of view" (Geertz, 1974: 27) of New Tech.

Using terminology borrowed from Kohut, Geertz (1974: 28) contrasts this "experience near" sort of understanding of behaviour with an "experience-distant" perspective. This study seeks to utilise experience-near accounts of the native's point of view derived from analysis of participants' own descriptions of their beliefs, thoughts, and experiences. The experience-near accounts are illustrated in chapters 5 and 6. These views will be combined with the researcher's use of conceptual frameworks or experience-distant concepts, to produce an interpretation of the lived experiences in both school settings and the local school culture. Put another way, experience-distant concepts are what one uses to theorise or "intellectualize"

the native's point of view (Bernard, 1988: 149). These concepts are discussed in chapter 7 of this thesis. Geertz discusses the reasons for using both concepts:

Confinement to experience-near concepts leaves the ethnographer awash in immediacies, as well as entangled in vernacular. Confinement to experience-distant ones leaves him stranded in abstractions and smothered in jargon (Geertz, 1983: 57).

Methods for this study included semi-structured open-ended interviews, which are appropriate when focusing “on the meaning of particular phenomena to the participants” (Robson, 2002: 271), and participant observation of secondary classrooms, professional development sessions, school meetings, and after-school programs. Detailed fieldnotes were taken while observing various New Tech contexts. These are discussed in more detail in the following section on the fieldwork and data collection process.

3.3 Fieldwork and Data Collection Process

This research was conducted in five phases shown in the timeline below.

Dates	Location
<i>Phase 1</i> 24 January – 24 February 2012	Midwest New Tech
<i>Phase 2</i> 17-23 June 2012 & 17-19 July 2012	New Tech Network summer training conferences
<i>Phase 3</i> 15 August – 16 November 2012	Midwest New Tech
<i>Phase 4</i> 25 February – 22 March & 1 April – 5 April 2013	Pacific Coast New Tech
<i>Phase 5</i> 16 April – 3 May 2013	Midwest New Tech

I spent 5 weeks at Pacific Coast New Tech and approximately 5-1/2 months at Midwest New Tech, my main field site. The time at Pacific Coast was considerably shorter due to funding limitations and, as a result, fewer student interviews were

conducted and I had less time to develop relationships and gain a more comprehensive understanding of the social relations between school members. However, I conducted intensive fieldwork, attending the school 5 days a week and observing and interacting with participants after school. This allowed me to gather a considerable amount of data, conducting a total of 29 interviews (see Table 3.1 on page 73) within that timeframe. Also, school members were very open and willing to share their experiences. In addition, I attended two New Tech training conferences attended by staff members of New Tech schools across the U.S. I also attended Midwest New Tech 5 days a week to closely follow important events within the school and within classrooms. The first one to two weeks of my initial visits to each site were spent developing rapport with participants, observing classes and staff meetings, taking fieldnotes, formulating interview questions, and speaking informally with teachers, students and other staff members.

I observed classes in most subject areas. However, I tended to spend less time in classes teaching subjects I am less familiar with (e.g. advanced math and physics) so that I could follow closely the presentation of ideas in class lessons. I followed two class projects at Pacific Coast New Tech and three projects at Midwest New Tech from beginning to completion to enhance my understanding of the New Tech model, how it shapes the teaching and learning process, and the complexities of the method in the classroom.

I conducted semi-structured open-ended interviews with teachers, students, administrators and parents and also spent time socially with participants during lunch periods and after school. I was able to interview most of the teachers who allowed me to observe their classes. However, there were a few teachers from each school who declined my request. I also interviewed reading specialists and special

education teachers, whom I met while they were working in classrooms with the main teachers. There were 17 full-time teachers at Pacific Coast High and 37 full-time teachers at Midwest High. Approximately 70% of the full-time teachers at both schools were interviewed for this study.

Teacher and administrator interviews lasted approximately one hour. Interviews with students, parents and other staff members lasted approximately thirty to forty-five minutes. Some teachers were interviewed more than once for follow-up or clarification on specific issues. I interviewed a total of 79 participants. Table 3.1 below provides a breakdown of participants by site.

Table 3.1					
New Tech Participant Interviews (audio recorded)					
	Teacher Interviews	Student Interviews	Administrator Interviews	Parent Interviews	Other Staff Interviews
Midwest High School	26 (10 males, 16 females)	16 (7 males, 9 females)*	5 (1 male, 4 females)	1 (female)	2 (1 male, 1 female)
Pacific Coast High School	12 (5 males, 7 females)	9 (3 males, 6 females)**	1 (female)	4 (females)	3 (1 male, 2 females)

* 2 freshmen (1st year students); 8 sophomores (2nd year); 1 juniors (3rd year); 5 seniors (4th year)

** 3 freshmen (1st year students); 2 sophomores (2nd year); 2 juniors (3rd year); 2 seniors (4th year)

Teacher and Administrator Interviews

Teachers were sent an email with details about my research. In the email, I asked teachers if I could interview them and I included information about confidentiality along with a consent form. With very few exceptions, teachers and administrators at both schools agreed to be interviewed. The interview questions were categorised as follows: 1) general experiences as a teacher; 2) understandings of school culture; 3) experiences of school culture change; 4) working within the New Tech model; 5) use of ICTs for teaching and learning; and 6) understanding of

school social structures. See Appendix A for the interview schedule which was used as a guide.

Spradley, discussing ethnographic interviewing, writes that it,

involves two distinct but complementary processes: developing rapport and eliciting information. Rapport encourages informants to talk about their culture. Eliciting information fosters the development of rapport (Spradley, 1979: 44).

Eliciting information also involves trying to gain a deeper understanding of what the interviewee is communicating. This can be done by asking the interviewee to provide examples that “paint a picture in [one’s] mind of the world that is in his or her [the interviewee’s] head” (Barbour and Schostak, 2011: 64). Even so, there is no direct transference from the mind of the interviewee to that of the interviewer. What is being expressed by the interviewee is itself an interpretation of how they perceive or experience situations. Ethnographers must exercise caution, as “anthropological writings are themselves interpretations, and second and third ones to boot” (Geertz, 1973: 15). This is indeed complex work. However, as discussed in section 3.1, observations provide data on what people actually do and this supplements and adds another dimension to participant interview data. Also, ethnographers strive to develop relationships with participants in an effort to better understand them. I discuss my relationships with participants later in this chapter.

In addition to developing rapport through interactions during participant observation and general conversations, the first category of my interview questions, focussing on general experience as a teacher, also helped to build rapport. One of the goals of this first interview question was to put participants at ease and begin with a question they might feel very comfortable answering (Forsey, 2008: 66). Additionally, answers to this question and other questions asked during the

interview helped me to understand more about the biography, beliefs, and values of the individuals and how those aspects underpin behaviours within the school context. Forsey argues that ethnographic interviewing seeks to gain a more in-depth, holistic view and that ethnographers,

should be able to link aspects of [the interviewee's] personal story to the issues we are seeking to describe and analyse in the formal write-up of our research data (Forsey, 2008: 59).

One example of this from my research is a teacher who talked about how following the New Tech model was very similar to his experiences of being a coach. He stated that this made the transition from a traditional school to a New Tech school easier for him. This is one instance where a teacher's personal biography played a role in facilitating the implementation of the New Tech model in his classroom. Additional information about this particular teacher, as well as other examples of how the personal biographies of participants influenced implementation of the model, are discussed in chapter 7.

The categories of interview questions listed above correspond with my stated research questions outlined at the beginning of this chapter. The interviews for participants were open-ended, which led to additional questions that do not appear in the schedule. Also, the schedule was used as a guide and it was adapted for the particular context and for different categories of interviewees.

I chose to interview teachers who had a number of years of experience teaching at the fieldsites and I also interviewed those who were new to each site. I felt it was important to include teachers with a range of experiences, following Forsey (2008: 63), who suggests that teachers who are new to a site may offer insights and views that vary from "well-enculturated" participants. Veteran teachers as well as new teachers were also asked questions about their experience

of social relationships, for example team teaching, within the school as well as questions about their general experiences as a teacher at the site. Answers to these questions helped me to understand more about the socialisation and enculturation processes from the perspective of teachers with a range of experience. Answers also illuminated tensions associated with the process.

I also interviewed teachers who were considered experts in implementing the New Tech model. I was led to these teachers by their colleagues and they became key informants about all things “New Tech.” This was particularly the case at Midwest High because the model was new there. Additionally, I interviewed teachers who, for a number of reasons, were not implementing the model with fidelity. These interviews yielded important information about some of the challenges of implementation.

Participants at Midwest High were also asked to talk about the process of becoming a New Tech school, including the role of staff members in the decision-making process to transition to the model. Answers to these questions provided information about social relationships and organisational structure as well as the successes and challenges of implementation. This is discussed in more detail in chapter 6.

Student Interviews

Students were provided with a typed handout of the research details, a consent form, and my contact information. A consent form was signed by each student participant and also by their parents or guardians. Twenty-six students were interviewed for this study. I had an opportunity to interact with most of these students in various classes and the selection was diverse in terms of ethnicity, age,

gender and academic success (see table 3.1 above). Some of the teachers also helped me to contact students when I was specifically looking to interview a student in a particular year group. Student interview questions were categorised as follows: 1) experiences at their school generally; 2) experiences of working within the New Tech model; and 3) use of ICTs at home and school. See Appendix B for the interview schedule which was used as a guide. These interviews revealed aspects of the socialisation and enculturation processes for students as well as insights on social relationships within the school and how particular New Tech values are made manifest within the schools. I discuss student experiences at Midwest High in detail in chapter 5, section 5.6, and student experiences at Pacific Coast High in chapter 6, section 6.3.

Parent Interviews

I interviewed a total of five parents. Some of the parents interviewed held the unique position of being an employee of the school as well as having children who attended the school. I made contact with parents at Midwest High and initiated the interviews. Parents of students from Pacific Coast High sought me out during “Parents on Campus Day”, an event in which parents participated in various workshops and observed students’ classes. The principal included me on the program, inviting parents to “meet and share your perceptions with a researcher from Oxford University in England who is doing her dissertation on the ways school culture impacts the use of technology.”

Interviews with parents focused on their own and their children’s experiences of the school and the New Tech model. Parents were also asked about their own and their child’s experiences using Echo, New Tech’s collaborative

learning environment, and other ICTs. I have provided an interview schedule in Appendix C, which was used as a guide during the interview process. The questions have been categorised as follows: 1) experiences of the school; 2) experiences of the New Tech model; 3) use of ICTs. Answers to the questions revealed important insights into the relationship between parents and the school as well as insights on parent perspectives on group work. Additionally, parents shared challenges and concerns related to the school's use of Echo and other ICTs as tools for communication. These concerns were also raised in a separate workshop conducted earlier that day.

Although I have provided information on my interactions with parents, I have not included a section on parent experiences in this study due to the small number of interviews conducted. My initial plan was to include parent experiences. However, the number of teacher and student participants was more than anticipated. These interviews and the school observations were the most central to the study and time constraints did not allow for a sufficient number of parent interviews. There may be opportunities to focus on this aspect in a future study. For this study, the main focus is on teachers and students.

Collection of documents, photographs and videos

I gathered a significant number of different types of data from each school and also from the two New Tech Training Conferences I attended. I collected data that were available online such as relevant school board minutes, news articles, and videos. My strategy was to collect every document available to me with an understanding that they may reflect aspects of the culture of each fieldsite (Marshall

and Rossman, 2006: 107). I provide a brief description of the data and their relevance for the research. A more complete list can be found in Appendix D.

I collected documents specific to school sites, such as teacher planning documents, school culture surveys, and YouTube videos created by students and teachers. I also took photographs at both school sites and at the New Tech conferences and I have videotaped presentations by students at Pacific Coast High. The photographs reveal important aspects of school culture, such as the persistent focus on “collaboration” and “culture-building” as cultural ideals in New Tech schools. Additionally, the videotaped presentations demonstrate how student knowledge is shared with a wider audience outside the school. Examples of this are discussed in chapters 5 and 6. One photograph is used to illustrate a point in chapter 6 but photographs and videotaped presentations functioned primarily as visual fieldnotes.

A number of documents were collected from the two New Tech conferences I attended during the summer of 2012. Those documents include conference program books and a book, *PBL Starter Kit*, published by the Buck Institute. I also collected documents from the various conference workshops. These include teacher and principal evaluation rubrics, a school success rubric, the “pressure cooker” document meant to help school leaders deal with stress and conflict in the school environment, and a “leadership vs. authority” document. These data reveal information about the beliefs and values that make up the ideal New Tech culture and important aspects of the teaching and learning process as well as guidelines and goals for school leaders. My main focus during the conferences was on teacher training. I used a data grid to sort the information as it pertained to my research questions.

My Role as a Participant Observer

Being a participant observer provided an opportunity for me to compare teachers' statements about their practice with their actual observed pedagogical practice as well as an opportunity to formulate new interview questions and modify existing ones based on my observations. The use of participant observation as a method, and developing good field relationships, helped me to better understand participant experiences and learn "their social conventions and habits, their use of language and non-verbal communication" through participation in local activities (Robson and McCartan, 2016: 323). For example, in Pacific Coast High, I had an opportunity to observe a class session in which students conducted presentations and parents and other community members served as panel members giving students feedback. I was invited to join the panel. I agreed to join on a different day so that I first had an opportunity to listen to the questions and feedback from the panel members and observe the student presenters' responses to the feedback. In essence, I wanted to learn one of their "social conventions" and felt I needed to observe first to try and understand the process before participating.

My role as participant observer in Midwest High included conducting a workshop with small groups of students to discuss the use of observation, interviews, and surveys for research. This activity was connected with a research project students were preparing for a combined English/Sociology class. One characteristic of New Tech schools is the practice of inviting community experts to give talks related to student projects so that they can see real world connections to their work. I was considered a community expert and conducted the workshop over a period of two days. I incorporated two student-produced YouTube videos to discuss interviewing and I used another YouTube video of a first grade classroom to

give students an opportunity to briefly practice their observation skills. I discuss this project in more detail in chapter 6, section 6.3.

At Midwest High, I accompanied teachers on brief student home visits to inform parents about important upcoming test dates. I was also asked by one teacher to fill in for a parent who was unable to attend parent conferences. In this role, I listened separately to two twin brothers, approximately 15 years old, as they spoke with me about their grades, progress, struggles in their classes, and their standardised test scores. We also discussed their plans for the future.

Additionally, I sought other appropriate ways to participate at Midwest High. The school is located in an economically challenged neighbourhood and staff members shared school emails regarding donation requests for certain “basic need” items. I participated with other staff members in the donation of these items. The needs at this school are many and I plan to continue my involvement with this school once the research has been completed.

At Pacific Coast High, I served on additional panels with parents and other community members to provide feedback to students on their projects and presentations. Additionally, I accompanied a class of 13 and 14 year olds on a field trip during which these students presented puppet shows designed to persuade younger children to take action, for example, to buy organic foods, don’t take animals out of the wild and exercise more instead of spending all their time in front of the computer or television. During this trip, I assisted one teacher by videotaping performances. I also provided feedback to students as they rehearsed for their performances.

Pacific Coast High has a significantly lower number of students who qualify for free or reduced cost lunch. The school newsletter indicated that donations of

snacks and fruit drinks were welcomed, so I participated in that way. I inquired about the nature of the need and was told that sometimes students either forget to eat breakfast or they simply do not leave enough time to eat before leaving their homes for schools. This was quite a different circumstance than at Midwest High where there were students who had insufficient food due to financial circumstances.

My participation at Pacific Coast High also included passing along grant information to a teacher who was interested in applying for grants for school resources. I was in the process of looking for education grants for myself and during the process I learned about opportunities that were appropriate to the needs of the school. My involvement beyond being an observer provided a way for me to have a constructive role within the school. In both schools, my goal was to be aware of opportunities to give back to the school community. Additionally, I have been asked by the New Tech research manager to present my research findings to the New Tech Network leadership team after I have completed the thesis. I have gladly accepted the invitation.

As discussed, one characteristic of New Tech schools is the involvement of community members and subject experts in classroom activities, so my involvement as an outsider was not out of the ordinary. Also, both of the schools in this study were designated as demonstration sites at the time of my visit. These are referral sites for educators, elected officials, and others interested in learning about the New Tech approach. These schools host a number of visitors each year and serve as training sites for schools new to the Network.

Scholars have varying views regarding the extent to which a researcher should be a participant at their fieldsites. Some researchers promote a more participatory role, noting that anthropologists,

thrive on feeling entangled and involved in the worlds in which they are describing (Mills and Morton, 2013: 53).

However, Hammersley and Atkinson (1983: 84), warn against “complete participation,” suggesting that the researcher, and therefore the research, will be constrained and the options for data collection limited. I disagree with this argument and the term “complete participation” is misleading. There are various types of participation, for example one can participate as a teacher or teaching assistant. In actuality, this type of participation can provide a wealth of data which would otherwise be unavailable to a researcher. This can offer researchers a unique perspective on the education process. However, I felt that taking on this role would have caused my priorities to shift from focusing on my research topic to spending the majority of my time preparing for class sessions and helping students to understand and complete their work. My previous experience as an educator influenced this decision, as I fully understand the time commitment that would have been involved. This is in line with more updated advice from Hammersley and Atkinson (2007: 37) that ethnographers must be selective in their participant observation activities, allowing time for writing and reflection with the aim of better quality data.

Additionally, I did not want my input to influence how lessons were developed and taught. Therefore, the majority of my time was spent actively observing, taking notes, interviewing, asking students questions about their work and giving feedback, and spending time talking with teachers and students during lunch and after school. This approach worked well for me personally, allowing me time to reflect on my experiences and do some writing in the school library or teacher’s lounge when I was not observing. These decisions were made keeping in

mind the amount of time available for fieldwork. My decision may have been different had I been able to spend an entire school year at each site.

Researcher roles can and often do change with various circumstances during the research process, as discussed by Hopwood (2007: 58). Additionally, Walford (2011: 46) notes that “the researcher initially is restricted in the choice of his or her roles by the knowledge, experiences and expectations of those to be studied.” The participants did shape my role as a participant observer as many of my roles evolved naturally and were initiated by the participants. As stated earlier, I was asked to be a member of several panels giving feedback after student presentations and I taught several groups of students about basic research methods. In addition, students would often ask me to clarify something for them in class and students and teachers would ask me for informal feedback on their work. Ultimately, each researcher has to decide for himself or herself what types of participation are appropriate for the research goals, keeping in mind that the research context and expectations of the participants will often impact opportunities for participation.

In addition to conducting the interviews and observations outlined above, I attended the annual New Tech Network “New Schools Training” conference in June 2012 as well as the New Tech Annual Conference in July 2012. These conferences provided intensive training for teachers, administrators and support staff who are new to New Tech. They also provided training sessions for those more familiar with the model. Observing the training sessions, taking fieldnotes and interacting with and interviewing the participants helped me to develop a better understanding of the socialisation and enculturation efforts of the New Tech Network to prepare staff members for work in New Tech schools. Teacher experiences of these processes are described in chapters 5 and 6 and analysed in chapter 7.

Fieldnotes

As noted earlier, ethnography is a process as well as a product (Agar, 1980:1) and fieldnotes are part of the process and also the first step in developing the product (the written ethnographic report). The process of recording fieldnotes varies with the preferences of the ethnographer and the conditions in the field (Walford, 2009; Mills and Morton, 2013). The field, for my research, included the schools themselves but also the surrounding neighbourhood for each school. Some of the first fieldnotes I recorded were of my travels on foot as well as by car through these neighbourhoods. This was important to gain a better understanding of the socio-economic conditions that impact students.

I was able to compose very detailed notes during my observations. My usual routine was to sit in classrooms, observe and walk around frequently to watch students work, ask them questions, and answer questions that they asked of me. I was also able to sit with groups of students as they worked together in teams. I recorded detailed notes while in these class sessions and added more detail later in the day. My notes focused on what was happening in the classroom, including the presentation of lessons, interactions among teachers and between teachers and students, as well as interactions between the students and my interactions with school members. Notes also included student successes and struggles as well as their use of ICTs. As suggested by Frankham and MacRae (2011: 34), I recorded, to the best of my ability, the sites and sounds of the classroom. I took notes on regular daily routines as well as events that were out of the ordinary. I also took notes after certain interviews when it was important to note a participants' body language, as this could not be captured with the voice recorder. For example, at Pacific Coast High, there were times when participants' body language and tone of voice revealed

tensions when answering a question regarding a particular book teachers were required to read for professional development. Noting this body language was important, as I later learned that the tensions I observed went beyond mere dissatisfaction with the reading of a book. The dissatisfaction was also associated with the school leader who assigned the reading. Tensions involving staff and school leadership at Pacific Coast are discussed in chapter 5.

I took notes using a laptop as well as 5x8 inch lined notepads. I created a folder on the laptop for each school and a separate document within the folder for each class and added to it daily with the appropriate dates. I experimented with other methods of organisation but this worked well for me. The notes on lined pads were retyped on the laptop and organised by date with course names and teacher names at the top. My questions and notes to self were written in with the notes, usually in bold when using the laptop and underlined, circled or with an asterisk on the notepads.

Drawings and sketches are also a useful form of note taking, as are “scratch notes.” This term serves as a “reminder that writing can get in the way of just ‘being’” (Mills and Morton, 2013: 80). I took photographs instead of creating drawings. I received permission to do so from school leaders and from individual teachers. I photographed individuals and also classroom setup, artefacts related to class lessons, classroom signs and symbols, common areas of the school buildings, and the surrounding neighbourhood. These photographs served as a valuable extension of my notes.

There were occasions when taking notes would have been inappropriate and I had to decide whether to excuse myself to scribble quick scratch notes in the ladies’ room or to remain in the company of participants and take mental notes.

This happened mostly during casual conversations or when having lunch or dinner with participants. Most times I opted to take mental notes and put them in written form later in the day.

Relationships in the Field

I worked to develop rapport with teachers and other staff members in the early stages of the research by having brief conversations between class periods and longer ones during lunch and after school. Many of these conversations were about lessons or students I observed. I also think my age (as I am a mature student) and my previous experience as a teacher were factors in being able to build rapport. I have a deep respect for teachers and I was genuinely curious and excited about the classroom activities. Conversations about teaching and the teaching profession came naturally.

I learned later that many teachers heard about my interactions with others and I believe this helped to develop additional relationships. This was especially crucial at Midwest High, as I learned that evaluators from another prestigious university in England had been commissioned by a state politician to evaluate the school in a previous year. Teachers were not at all happy with the experience. In talking about it, one teacher summed up the experience by saying, “They basically told us we were doing everything wrong.” This made some leery of my intentions initially, and one teacher, rather defensively, asked me what my research was about and who was I working for. I made it clear that I was a student and not there to evaluate and that my goal was to understand the education process.

Spradley's view on building rapport is that it is a four-stage process for both the interviewee and the interviewer. He refers to the last stage of the process as "participation," and describes it as,

one in which the informant recognizes and accepts the role of teaching the ethnographer ... Between interviews they [the informants] are on the lookout for information relevant to the ethnographic goals (Spradley, 1979: 48).

Spradley views this stage as "a new dimension" of the relationship between the researcher and the informant. Some of my relationships in the field progressed to this stage. For example, some participants would suggest that I review certain documents or attend specific meetings they thought would be helpful for my research. For example, a teacher at Midwest High suggested that I accompany her and others on a visit to student homes so that I would have a better understanding of problems related to the socio-economic struggles of students. These experiences were invaluable in helping me to develop a more holistic view of issues that impact school reform at each site.

I developed close friendships with certain teachers. These relationships formed gradually and naturally. One teacher referred to a small group, which included myself and another teacher, as her "fristers" (friends and sisters). Some teachers felt comfortable sharing many aspects of their personal lives. Some of the things they shared helped me to understand how their personal histories shaped their behaviour and interactions in the school setting. For example, one teacher's humorous outbursts at unexpected times were more understandable to me after learning about aspects of her personal history, including how she manages stress. I take these relationships seriously and I remain in contact with many staff members from both schools. However, dual friend/researcher relationships can be difficult. I

felt that I was always in researcher mode but keeping in mind the imperative to “do no harm” when determining what needs to remain private and what is necessary for the research. There were times when participants were also aware of this dual relationship. Occasionally, a participant would make a comment and then turn to me with a smile and say, “don’t print that.” There were also times when I would initiate and say, “Don’t worry, I won’t be printing that comment.” At other times, I would ask if I could write about something that was discussed. A certain level of trust developed between myself and some participants who became key informants. They shared information with me that I would otherwise not have discovered.

In another example, during dinner with a small group of staff members, one person jokingly said he felt like he was being studied. We laughed and I told him that I would certainly share with him anything that was said privately that I would like to include in the study. I tried to clarify the boundaries. For example, during dinner, he used the word “enculturation” to describe the process new students go through when entering Pacific Coast High. Of course, my researcher radar zeroed in on this comment. I scheduled a second interview with him that same week and prefaced the interview by mentioning his statement and saying I wasn’t studying him but was just interested in getting clarification on his view of enculturation. After the interview, I shared with him that I found it interesting that he used the word enculturation to describe the process and that it was one of the concepts I was using for the study. I felt it was important to share why that particular statement was important for the research.

I got to know students in both schools by speaking with them in class, during lunch and after school. Very few teachers formally introduced me in their classrooms. This may be because the schools have numerous visitors and it would

interrupt the learning process to stop and introduce every visitor, although most visitors were only there for a short period of time. I introduced myself to several students individually and some approached me to ask who I was and why I was visiting. Students referred to me as Mrs. Calabrese. Interestingly, two students from Pacific Coast New Tech introduced me to other students as their friend, Mrs. Calabrese. I'm not sure how I achieved the "friend" status with these students but I was flattered by it. It could be because one of the students took me on a tour of the school the first day I arrived and he was diligent to ask how I was doing for the duration of my visit. The other student, a Black female (as am I), invited me to a church service, which I gladly attended. There were very few Black students at the school.

It seemed that students got used to me being in class and would sometimes ask me questions about assignments or ask my opinion about a project they were working on. It appears they didn't see me as an authority figure, as students who were off-task on Facebook or other sites rarely switched screens when I walked past but would noticeably switch screens when a teacher or teaching assistant walked past. There was a much higher incidence of students being off-task at Midwest High than at Pacific Coast High. It seems that one of the benefits of my not being in a position of authority (i.e. teacher or assistant) is that students tended not to change their behaviour when I was in the classroom.

3.4 Subjectivity and Reflexivity

Solomon (2005: 900) defines subjectivity as, "pertaining to the subject and his or her particular perspective, feelings, beliefs, and desires." Inherent in ethnographic research is the fact that the researcher is the main research

instrument and his or her subjectivity impacts the research. Peshkin, reflecting on his own subjectivity, provides an explanation of how this affects the researcher and the research process.

I am subjective when I do research, as are we all, because of three interrelated aspects of self: first, the affective state of my being; that is, that I have values, attitudes, and tastes ... I am subjective because of my history; that is, because I have had a past, in a particular place and time, within a particular family, and so forth ... I am subjective because of my biography; that is, my personal attributes of gender, age, religion, marital status, occupation, political affiliation, and so forth. My biography, as does everyone's, shapes me, presses me, influences me in certain directions (Peshkin, 1994:47).

The researcher and his or her subjectivity are intertwined. However, through a discussion of his own research experiences, Peshkin explains that being conscious of one's subjectivity can be beneficial in avoiding negative effects on the research process.

I became acutely aware of my own subjectivity while reflecting on the choices I made throughout the research process and how my biography, and perspectives related to my biography, shaped those choices. I hold a deep interest and appreciation for both educational and anthropological studies. That interest has developed over two decades. I have been married for over twenty years to a medical anthropologist who is also an ethnographer. During those years, I have accompanied him to various fieldsites and have been fortunate enough to sit in on research interviews when the situation called for an additional person to be present. I have had the opportunity to interact with people from various backgrounds and cultures and have attended numerous anthropological talks. Many of my close friends and associates are anthropologists and it has always been exciting and sometimes shocking to hear about the beliefs, values, norms and practices (the culture) of those in far away and not so far away lands. I also took several

anthropology courses in college and hold an endorsement (credential) from the Illinois Board of Education to teach anthropology at the high school level. I do not claim to be a trained anthropologist. However, these experiences have certainly influenced my approach to this research project. One might say that I have been enculturated into an anthropological worldview.

My beliefs and values about the education process influenced my decision to study New Tech High Schools. For example, my reading of the literature on these schools indicated a use of highly constructivist approaches to learning, which I value greatly. Also, my experience as a teacher and technology curriculum coordinator, in schools where both sociocultural factors and school structures posed significant barriers to the integration of ICTs, influenced both my choice of schools and my initial research topic about school culture and the use of ICTs. Although my topic has evolved during the research process, I was initially interested in New Tech schools because they appeared to be having success integrating technology across the curriculum. Throughout the research process, I have taken a reflexive approach, being mindful of my beliefs and values and continuing to question them throughout the research and analysis process.

Reflexivity involves,

an ongoing self-awareness during the research process which aids in making visible the practice and construction of knowledge within research in order to produce more accurate analyses of our research” (Pillow, 2003: 178).

Taking a reflexive approach has been helpful in the process of understanding how my assumptions and understandings about certain situations influence the research process. For example, one Friday at Pacific Coast High, the student body watched a video about the teaching staff’s experiences in college. Students interviewed

teachers about their college experiences and created the video. After viewing the video, students were given the opportunity to attend a session with the teacher of their choice to hear more about their experiences and to ask questions. It was during one of these sessions that I was listening to a teacher describe her experiences. She was in the process of sharing with students that her parents had been alcoholics and, having seen personally the effects of alcoholism, she was not drawn in by student drinking parties during her college years. I was listening intensely to her story and student questions when the principal entered the room, walked over to me and whispered that a meeting was in session to decide if the school would be awarded a prestigious state honour. Administrators and members of a state committee were in this meeting and the principal invited me to attend. I smiled, thanked her and proceeded to the meeting room but on the inside I had mixed emotions with a general feeling of apprehension. My immediate thought was, "I'm not wearing a suit and I don't want to sit in a meeting with the Suits!" I was also wondering about the motives of the principal. I was grateful that she had emailed me the night before to tell me about the meeting and then took the time to find me on the day and steer me in that direction. I did not want to offend her by ignoring the invitation. However, it seemed a bit pushy to me and I wondered if the meeting might be a praise fest for the school and I was more interested in learning about the day-to-day realities in the classroom.

I was also apprehensive for other reasons. What was happening in that classroom was part of the process of teachers building relationships with students and I wanted to see that process to the end, so that was indeed part of my apprehension. However, the longer I was in the field, I became more acutely aware of my discomfort around school administrators and my nervousness when speaking

with them in their offices. This was the case in both schools and the feeling was magnified in the meeting I attended at Pacific Coast, where three high level administrators were present. These feelings at first seemed unfounded, since most of the administrators I met seemed unthreatening. Still the feelings remained and were quite bothersome.

It was not until I began to seriously reflect on these experiences that I understood the sources of the anxiety. As a student in the U.S., ever since I can remember, being sent to the principal's office meant one was in trouble. The "office" was not a desirable place to be. In addition, as a teacher, most of my interactions with principals were associated with evaluation after having been observed teaching students. This involved a discussion about the principal's observations and sometimes, depending on the principal, that "discussion" could be fairly one-sided. My personal history in the U.S. education system was as a teacher interacting with administrators who had a certain degree of power over me. Certainly these relationships were not always problematic. On the contrary, I have worked with school leaders who viewed the teacher-principal relationship as a partnership and acted in a manner that honoured teacher ideas and opinions. They were skilled at developing teachers using a positive, constructive approach.

Some of my previous experiences as a student, and as a teacher, triggered feelings of uneasiness related to issues of administrative power and perhaps a bias towards the perspective of teachers. This understanding, brought about through the process of reflexivity, helped me to be more conscious of these issues as they concerned my participants. Indeed, upon reflection I realised that some of my apprehension stemmed from some of the comments from teachers regarding their

interactions with school administrators. There were certainly power struggles and clashes at both sites, which are discussed in chapters 5 and 6.

The process of being reflexive helped me to understand that my perspectives were influenced by my identifying more with teachers than with administrators. I certainly recognise that administrators play an extremely important role in shaping school culture and I have included them in this study. However, the majority of my time was spent with teachers and students. Teachers are the ones who work most closely with the students and they are the ones implementing the New Tech model in the classroom and one of my main research goals was to understand how the model is implemented in classrooms and how implementation shapes school culture. My close relationships with teachers and the interviews and deep conversations that ensued helped me to better understand the complexities of the implementation process and the various perspectives of participants regarding that process.

3.5 Ethical Issues in the field

Throughout the research process, I remained focused on ethical issues. Even when participants have given informed consent, researchers must think deeply about the kinds of relationships they develop with participants and what that should entail both during and after the research process.

Earlier in this chapter, I discussed the complexities of dual friend/researcher relationships and the importance of negotiating consent in the field. The matter of gaining consent is not a one-time occurrence and, as Mills and Morton (2013: 64) have noted, the ethnographer is obligated to explain how consent was sustained throughout the research process. I visited Midwest New Tech several times and

participants were aware that during each of my visits, I was still conducting research. The British Educational Research Association's (2011: 5) stance on consent is to ensure that participants understand their engagement in the research process and The American Anthropological Association (2004) suggests that the process should be reviewed with participants as the research progresses. As such, with each new visit, I asked permission to observe classes and engaged in informal discussions about conversations that were off-limits for publication.

Additionally, I have used pseudonyms in place of the real names of the schools and for all participants to protect their identities. However, Bresler (1996: 140) discusses the limitations of anonymity in qualitative research, explaining that it is difficult to protect the identities of participants from fellow members of the research site. For example, the personalities of teachers can be revealed in interviews as well as in thick descriptions of teaching techniques, specific behaviours, and individual classrooms. I have considered these issues, keeping in mind the ethical admonition to "take care to do no harm" (American Educational Research Association, 2011: 147). There were times when I needed to decide whether to include a particular observation or to write about it in a more generic way. As the research progressed, I realised that there were particular facts about each school that, if published, would make them identifiable. I have exercised care in the anonymisation process so that the school sites for this study are not easily identifiable. The progression of thought on these issues demonstrates that the "ethical framework evolves with the research and is context-specific" (Davies, 2008, n.p.).

3.6 Representation and Participant Voice

I have carefully considered issues of power, as it relates to the researcher-participant relationship, during the research process. Bresler (1996: 136) notes that the researcher has power to shape representations of participants in publications of the research. This section addresses this issue in my own research, as representation and participant voice are important elements of this study.

Clifford, writing about the problem of ethnographic authority suggests that,

It becomes necessary to conceive of ethnography not as the experience and interpretation of a circumscribed “other” reality, but rather as a constructive negotiation involving at least two, and usually more, conscious, politically significant subjects. Paradigms of experience and interpretation are yielding to discursive paradigms of dialogue and polyphony (Clifford, 1988: 41).

I use a combination of techniques in this thesis to give voice to participants. My approach to what Clifford describes as “constructive negotiation” involved asking participants to clarify and elaborate during interviews and discussions as noted earlier in this chapter. I also asked them follow-up questions about my observations in classrooms and meetings. This was done to enhance my understanding of participant perspectives.

Additionally, I use several direct quotes from participants rather than just my own summaries of events. This helps to represent the unique perspectives of participants in the study. I developed close relationships with participants and spent an extended period of time as a participant observer in classrooms, meetings and social settings. The combination of listening to the words of participants, observing their actions and interacting closely with them on a regular basis provided me with insights that helped me to represent participants, recognising that each individual is multi-faceted and complex. My data provides the reader with a

snapshot of individuals and their perspectives and activities during the time of my research.

3.7 Data Analysis

I used qualitative content analysis to develop categories and identify themes in the data. Qualitative content analysis is concerned with mapping “meanings, intentions, consequences, and context” (Downe-Wamboldt, 1992: 314). I was particularly attuned to data that illuminate New Tech cultural ideas and practices, the experiences of students and teachers with the model, and elements of the local context and school culture.

I employed a reflexive iterative approach to data analysis. The term ‘reflexive’ as used here emphasises my role as the investigator in determining themes in the data based on my familiarity with my field contexts and reflections on my participant observation. The framework is iterative in that I repetitively returned to the data as additional questions emerged during the process of analysis. Srivastava describes reflexive iteration as being,

at the heart of visiting and revisiting the data and connecting them with emerging insights, progressively leading to refined focus and understanding (Srivastava, 2009: 77).

This analytical framework works well with a methodology that focuses carefully on the subject’s meanings as expressed in interview transcripts and personal interactions and that incorporates a variety of other forms of data.

My first step in analysing recorded interviews was to listen to them carefully for overall understanding. “Reviewing data without coding helps identify emergent themes without losing the connections between concepts and their context” (Bradley, Curry and Devers, 2007: 1761). Both Robson and McCartan (2016: 357)

and Guest, MacQueen and Namey (2012: 129), following Miles and Huberman (1994: 11), write about the process of data reduction as being an important part of the analysis process, allowing for a sharper focus as data is organised. In aiming to manage the contents of my recorded interviews, I listened to them and took notes on relevant sections using a media player with a counter. The use of notes and a counter allowed me to return to specific sections quickly if needed. I personally transcribed all of my interviews and, because I acquired a large number of them, I transcribed the portions of interviews that revealed data relevant to the research questions following Poland (2013: 281) and Robson and McCartan (2016: 305), who suggest being selective in the transcription process when there are large amounts of data.

My methodology involved an integrative approach to developing a coding structure to be applied to interview transcripts, observations from fieldnotes, and other narrative data. An integrative approach “employs both inductive (ground up) development of codes as well as a deductive (top down) organizing framework for code types” (Bradley, Curry and Devers, 2007: 1763). The development of deductive codes was guided by my research questions and were applied as pre-determined codes for the first phase of analysis. Initial codes were quite broad. For example, the code “culture” included text, in which the term culture was mentioned and also text that described particular aspects of culture. Later, this code was refined and more specific codes were developed. For example, participants spoke about particular values like trust, respect and responsibility, so a “values” code was created and then a code for each value. This coding structure was used in an exploratory, interpretive manner to investigate the data. From the participant

narratives and my observations, themes began to emerge regarding how particular values manifest themselves in the actions of participants.

During the inductive phase of my analysis, concepts like teacher identity, social control, human and social capital emerged. I discuss these concepts in relation to my findings in chapter 7.

3.8 Chapter Summary

This chapter has outlined the research design and methodology for this study. The main aim of this study is to understand how the implementation of the New Tech model shapes school culture and impacts the experiences of school members at two significantly different school sites. I have argued that an ethnographic case study design is well suited to explore this question, as the focus is on the insider's point of view and on shared cultural frameworks of interpretation, values and practices. I have also discussed in detail my field methods, including my role as a participant observer, my data and the collection methods, my relationships with participants and ethical considerations in the field. Lastly, I have discussed my use of qualitative content analysis for this study.

The following chapter explores the historical context for the development of New Tech schools. It examines the history and development of these schools from the origins of the first school, Pacific Coast High. This contextual information highlights the societal influences that prompted the creation of this school and shaped elements of the school's culture that still remain today. I also discuss the initiative to replicate the model and the cultural ideals promoted by the New Tech Network.

Chapter 4

The Development of New Tech Schools and their Cultural Ideals

To examine the historical development of New Tech schools, I use data from my interviews with two New Tech associates with firsthand knowledge of the planning phase for the first school as well as knowledge of the early years of the school's existence. One of the associates served on the planning committee for the development of the school. I also utilise data from an unofficial history of New Tech schools from 1999 to 2009, written by Susan Schilling, former CEO of the New Technology Foundation, (the forerunner of the New Tech Network). A doctoral study (Van Buren, 1999) also sheds light on the history of the first New Tech High School in the early years and examines the relationship between the school and its business partners, as well as school practices as they relate to the business model and the use of ICTs.

Importantly, this chapter also examines the ideal cultural characteristics that the New Tech Network seeks to instantiate in each school. These characteristics are detailed in the New Tech Network school success rubric and they are important for an understanding of how school culture is shaped by the implementation of the New Tech model.

4.1 New Tech High: The School that Business Built

As discussed in Chapter 2, schools do not operate in isolation. They are subject to the influences of the broader culture and structures of American society. They are shaped by the demands of federal, state and local government bureaucracies, the demands of business and industry, economic forces, and other societal factors. In fact, local economic factors and business influences played a

major role in the development of the first New Tech school, which opened in 1996. It is proudly referred to as “the school that business built.” The impetus for the establishment of the school was economic development. A major business and employer in the area closed down and the ensuing loss of jobs prompted the town’s Economic Development Corporation to connect with business owners from the technology sector to persuade them to establish their businesses in the area. Those efforts were successful and created a need for employees with the requisite skills to work in the technology sector. Ms. Stewart, who has a long history of involvement with the school, explained that the perspective of local businesses was that:

Although [area] graduates were really good students, smart kids, they were not graduating with the skills needed for their business. That included more computer knowledge and more customer service skills.

Ms. Lang also has in-depth historical knowledge about the school and she reiterated Ms. Stewart’s explanation regarding the business influence in the development of the school. This influence is also noted on the New Tech Network’s website.⁹

Members of the business community surrounding the school met with district school officials to discuss how they could better prepare students “to meet the needs of the new economy” (New Tech Network, 2014b, n.p.) and, more specifically, the needs outlined by the Economic Development Corporation. Their needs were taken into consideration and coincided with the need for an additional high school in the district due to population growth. The decision was made to create a small school for grades 11 through 12 with a plan to “bleed the lines between college prep and career prep” with “emphasis on skills and career tracks into the technology sector” (Schilling, 2010: 6).

⁹ See summary at <https://newtechnetwork.org/press/>

This first New Tech school was, in part, an arm of the business community in that the school was now providing training and essential skills to students. This was of great benefit to local employers who did not have to invest their own money to train employees. It seemed that the school, in essence, was providing an inexpensive source of labour for businesses. A critical perspective might suggest that they were more interested in serving their business needs than in the educational needs of students. I do not say this to minimise the benefit of this arrangement to the young people who wanted or needed employment after high school. I make the point because it illustrates how economic forces and the powerful influence of the business sector converged to create the first New Tech school. Even the name, New Technology High School, reflects the single-minded focus of the technology sector from which the idea for the school originated. Ms. Stewart provided further insight regarding the name of the school. The planning committee discussed possible names for the school. She explained,

It was just a group of us that worked on it most of the time sitting around trying to figure out what would be a good name for a school that had all this cutting-edge technology. "Cutting Edge Technology High School" didn't sound so great and the goal was to keep refreshing the technology ... and so we figured we would be striving to have new technology all the time and why not just say what we're about.

From the beginning the development of technological skills was a major focus of the school during the early years. This arrangement between the school district and local businesses was problematic as it prioritised the needs of businesses in high school education. It allowed local businesses to have (arguably) too much input in the education process, as shall be discussed later in this chapter.

A major challenge for the development of the school was funding. A portion of the funds needed to open the school came from what had been reserved to

provide portable classroom units to the existing high schools in the district to ease overcrowding. Additional funds were raised by obtaining a legislative direct appropriation. The development of local partnerships was key, as funds were also raised from businesses and local community organisations. “Support was garnered from over 40 national and local business and education partnerships prior to the opening day” (Schilling, 2010: 6). Technology was brought in for the purpose of preparing students for the workforce. However, the need for sharing and collaboration among teachers drove the network setup and software development activities, which were performed by business leaders who partnered with the school. In addition to forming partnerships with business leaders, the school also formed a partnership with the local college to provide students with access to a range of courses that could not be offered at the high school due to its small size. The development of partnerships with community businesses and organisations continues to be an important feature of New Tech schools.

Two years after opening, New Tech High was becoming well known, particularly for their one-to-one networked computing environment. They were recognised as a Model Digital High School in their state and this recognition drew visitors from around the country who wanted to learn more about the school. The New Technology Foundation was established to support the school with fund raising activities, handling of enquiries, and a host of other responsibilities encountered due to the school’s success (Schilling, 2010: 2).

In Their Own Image

The business partners influenced life at the school in terms of building design and even the philosophy of the school. For example, Ms. Lang stated, “[The] school was kind of designed around a work environment.” Even the original interior

colours and design of the school, in the early years, mimicked those of the computing solutions firm whose design team helped to create an environment that was unlike that of a traditional school. Van Buren (1999: 108) described the interior, at that time, as resembling a “high-tech start up.”

Ms. Stewart emphasised the business influence in terms of the very high expectations for students, with expanded graduation requirements that exceeded those of local high schools in the area as well as the creation of a partnership with the local college, so that students could study computer programming and various other subjects not offered at the high school. She describes their philosophy as,

Treat them [students] more like adults than kids and if they respond well to that, then you give them adult privileges.

A discussion of what this looks like in practice, along with the particular privileges granted to students for adult behaviour and the expanded graduation requirements are detailed in chapter 5.

From a reading of the available literature, it seemed as if the local business partners were trying to create a school in their own image during the early days of New Tech High. They attempted to shape the culture of the school to reflect business contexts, principles and practices. Van Buren (1999) discusses the business influence, pointing out areas in which this influence was problematic. She discusses their evolving vision for what the relationship between teachers and students should look like in the new school. It was thought that the relationships should replicate those found in the workplace, with students viewed as employees and teachers in a supervisory capacity. Van Buren notes that planners failed to understand that a school is very different from a business and their idea of student-teacher relationships was not feasible given the complexities of working with

students with a variety of academic and behavioural challenges. Students were not handpicked to attend the school based on their abilities, skills and demeanour, as is the case with hiring employees in a business setting. Van Buren notes that this type of relationship failed to achieve the desired results of students behaving more like adults.

A new vision for relationships was developed when the planners suspected that some students were not happy at the school. Now staff members were to visualise themselves as “service-providers” and students as “customers.” Van Buren explains that this move was motivated by the business partners’ marketplace orientation to keep the students or customers happy so that they would not choose to attend another school. This vision for teacher-student relationships created tensions for teachers. Although business partnerships were beneficial in many ways, the situations described above suggest a very lopsided partnership, with businesses imposing their judgments and business culture onto the school. Today, community partnerships, which include local businesses, do not interfere in the business of how New Tech schools are run. I discuss these relationships in chapter 5, section 5.1 and in chapter 7, section 7.2. However, the main focus of my thesis is on how the implementation of the New Tech model shapes school culture and the teaching and learning process, so I do not provide a fully developed account of each school’s business partnerships.

Recruitment of Teachers and Students

New Tech High chose to employ a national search to recruit teachers who were tech savvy and willing to implement a new model of education. Learning the new model, implementing it and supporting the new school in various other ways proved to be a tremendous amount of work for teachers and there were problems

with retention rates. Issues of workload and staff retention are illustrated in chapters 5 and 6 and discussed further in chapter 7.

The school opened with grades 11 and 12, which meant that students had to be recruited from neighbouring high school campuses. This created tensions between staff at these schools and staff at New Tech High. Ms. Stewart explained that these tensions resulted from neighbouring schools feeling that “it was hard to trust whether we were trying to take their best kids.”

Today, the school has students in grades 9 through 12 and each year there are 108 places available and approximately 170 to 180 applicants. Places are allocated by a lottery system and there is always a waiting list. Ms. Stewart describes a scene similar to that in the movie *Waiting for Superman*. She explained that the list of students who had a place would be posted on the door and students would:

get so excited and jump up and down and scream but then ... the ones that came up and didn't find their name were just devastated or would start crying and it was terrible. You want to be able to do this for everybody. But you can't really do this for everybody.

The names of those who have a place are no longer posted on the school door. New Tech High has an excellent reputation and in some instances, it is the parents who are eager for their children to attend the school, even when the students themselves may want to attend a different school. Some students are better suited than others for this type of school, as will be discussed in chapter 5.

4.2 Replication of the Model

In 2001, the New Technology Foundation (NTF) received a \$4.9 million grant from the Bill & Melinda Gates Foundation¹⁰ to replicate the New Tech model in other schools. NTF staff set about the task of working with school staff to understand the various aspects of the model, including “information about the culture, the curriculum and the use and role of technology in supporting these changed practices” as well as why each aspect is important and how the implementation should occur (Schilling, 2010: 4). My study expands on this focus and analyses the culture and practices in context to illustrate that a variety of complex factors impact the replication process in ways that are both positive and negative.

Schilling acknowledges the huge time commitment that was needed to plan for implementation, as well as the cultural shift in thinking differently about how teaching and learning is approached in a New Tech school. For example, “shifts in everything from resources and operational controls to shifts in expectations, assumptions, attitudes and beliefs” (Schilling, 2010: 5) needed to occur for both teachers and school leaders. Physical aspects of the school sites were also important, as the layout of classrooms and technology infrastructure needed to be in place to support the model. For example, students needed space to move around and collaborate with peers and both teachers and students needed access to shared teaching and learning resources.

Schilling (2010: 14) notes that several elements were necessary for the replication process. First, the schools needed to be small, usually around 400 students. The small size would more easily lend itself to building closer

¹⁰ Press release at <http://www.gatesfoundation.org/Media-Center/Press-Releases/2000/11/The-New-Technology-Foundation>

relationships. Also, the method of instruction was to be project/problem-based, with two subject areas combined in each class. In addition, a one-to-one computing ratio needed to be established. Schilling further notes that the culture at the school was very different from the culture in traditional high schools and researchers commissioned by the Bill & Melinda Gates Foundation applied a framework to characterise the school culture in an effort to aid in the replication process.

Researchers used surveys to examine social organisation, academic organisation, and normative climate. The surveys were not discussed in detail in the historical documentation and they were not available for me to review, so it is unclear how they contributed to the assessment of the school culture. As an approach to understanding a school's culture, the use of surveys alone constrains the capture of data, limiting it to answers to predetermined questions. However, an ethnographic approach, as used in this study, is maximally open to discovering new, unexpected data and different frameworks that emerge in the field. For example, Schilling notes that two of the core cultural elements that were crucial to the replication process were developing trust and responsibility. However, it is one thing to determine that trust and responsibility are values within a school culture and quite another thing to understand what those values mean locally, as well as if and how those values shape behaviours and what they look like in action in a particular school context.

The replication process for the first three schools provided NTF with valuable information about what needed to be included as part of the NTF school development package to help the replication process run smoother. Schools would receive assistance with staff and student recruitment, teacher and principal training,

onsite support, assistance with planning for technology set-up, and access to the network's online learning system.

The NTF made a conscious decision to establish itself as a school development organisation rather than a charter management organisation. NTF chose the development organisation route because their goal was to “transform high school education” in the public sector (Schilling, 2010: 18). This decision created a major challenge for recruitment. For example, during times of economic recession, newly hired New Tech teachers were laid off and replaced with teachers from the district not recruited by the NTF. This may have been due to regulations of the teachers' union.

NTF's first efforts at working to implement the model in an existing school in an economically disadvantaged area, and with a high proportion of students who were not performing at grade level proved unsuccessful for a number of reasons. First, NTF learned that schools transitioning from a traditional school to a New Tech school would need to undergo the transition process in stages instead of trying to transform the entire school at once. Transitioning would occur with one or two grade levels at a time, until grades nine through twelve were incorporated. This slower process of transition, with smaller groups, would, ideally, help with the development of a New Tech school culture and associated practices, as well as develop teachers who could support their colleagues in the subsequent phases of the transition. Also, schools joining the network would need autonomy regarding the hiring and training of teachers and they would also need to commit to a one-to-one technology infrastructure (Schilling, 2010: 39-40). The importance of shaping school culture is made apparent by Schilling, who explains,

It was clear that nationally much of the work would be located in existing facilities with districts that were attempting to convert rather than start new schools. These criteria were developed with conscious emphasis on de-culturizing the school (Schilling, 2010: 23).

In chapter 6, I discuss this transition and reculturing process at Midwest New Tech, focusing on staff and students' experiences and the various contextual factors that influenced that process.

There were several New Tech schools in the two states where I conducted my research. This, in fact, was an NTF strategy: to focus on building clusters of New Tech schools in the same region. This created a better support network for schools, making it easier for NTF staff to provide development services. New Tech schools have expanded and now include elementary and middle schools. This allows them to establish their culture and practices in the early grades, with the aim of a smoother transition and consistency of practice in entire districts. This is not quite the tri-level reform or whole system reform, "school/district/government," that Fullan (2009: 102) advocates. However, the New Tech Network seems to be moving in that direction.

Through the process of replication, the NTF determined that the one-to-one computing environment was vitally important to the success of the model, as it served as a major support for PBL, the main mode of instruction. Ms. Schilling, referring to schools that transitioned to the model, notes that,

It was the one-to-one that allowed PBL to be done everywhere all the time. Schools that were at one-to-one and using the tools were more successful (i.e. had greater fidelity to the model) than those that never made that investment. Staff determined that one-to-one is a non-negotiable going forward" (Schilling, 2010: 30).

In addition, Schilling notes that web access allows students to locate "timely" resources that support PBL as well as provide a means for exploring complex issues

instead of answering “simple questions.” For teachers, she explained that the benefits of New Tech’s web portal include having a space where teachers can share projects, communicate and collaborate with other teachers throughout the Network.

4.3 The New Technology Foundation becomes The New Tech Network

In 2009, the New Technology Foundation changed its name to The New Tech Network. At that time, it also became a subsidiary of KnowledgeWorks Foundation, a partner that provided financial and infrastructure support to the Network. This partnership changed status in 2014 when KnowledgeWorks announced that the New Tech Network would become an independent non-profit entity. According to a 2 July, 2014 KnowledgeWorks press release¹¹, the New Tech Network will receive an initial \$10 million grant from the Schuler Family Fund and KnowledgeWorks will contribute \$1.5 million to continue the development of New Tech schools. The New Tech Network continues the work of replicating the model across the U.S. and abroad. There are currently over 168 New Tech schools in the U.S. and 7 in Australia.

One of the goals of New Tech schools is to break from the dominant cultural model of public education. New Tech High was designed to be a non-traditional school. However, when the school first opened, non-traditional seemed to be synonymous with an education that suited the needs of the business community. A discussion of the various problems that developed during the early years, when business leaders were imposing their ideas about how New Tech High should function, has been well documented in Van Buren (1999). Some of the early influences of the business community remain. For example, students are still

¹¹ Press release at <http://www.knowledgeworks.org/knowledgeworks-announces-new-partnership-new-tech-network-expand-innovative-learning-and-student>

required to perform community service, earn college credits, and take on internships.

Advocates of the model explicitly emphasise the importance of changing the culture of education by elaborating certain ideas and espoused values promoted by the New Tech Network. Some of those key values are trust, respect, responsibility (New Tech Network, n.d., n.p.) and rigour, relevance, professionalism and the importance of building relationships, as indicated in the New Tech Network school success rubric discussed in the following section. Shaping school culture through promoting a set of beliefs and values is essential, as it is the foundation on which the New Tech model must stand. Fullan (2011: 5) makes the case that changing the culture of school systems, that is, the “values, norms, skills, practices, [and] relationships” within that system, should be the main driver for reform efforts. The following section examines the espoused values of the New Tech Network by examining their school success rubric.

4.4 New Tech Network Values: The School Success Rubric

The school success rubric contains benchmarks for how schools are developing culturally as well as in other areas. Schools are classified as “at risk,” “emerging,” or “advanced” based on how well they meet the specified goals outlined in the rubric. An examination of the rubric provides insight into New Tech values. A summary is provided here. However, a more detailed description of the rubric can be found in Appendix E.

The rubric is divided into three domains: Fidelity of Implementation, Ensuring Sustainability and Student Achievement. The first category under Fidelity of Implementation, Curriculum and Instruction, evaluates schools in terms of their

development and incorporation of school-wide learning outcomes (e.g. strong work ethic) and the extent to which PBL is the primary mode of instruction, with diverse, rigorous cross-curricular projects facilitated by team teachers. The second category, Technology, evaluates the quality of the school's technology infrastructure, the availability of IT support and the extent to which Echo and other digital online tools are incorporated into the teaching and learning process.

The final category, School Culture and Autonomy, evaluates the extent to which the school has established a unique identity and a culture that promotes respect, responsibility and a positive association with the school. The New Tech Network believes that school culture should be similar to that of the professional workplace and that respect, trust and responsibility, perceived as hallmarks of the professional workplace, should be the same in New Tech schools. Ideally, schools should be working toward a democratic culture of education and schools are assessed on how well student behaviour is handled using non-traditional management techniques.

The second domain of the rubric, Ensuring Sustainability, is composed of two categories. The first, Professional Culture, evaluates schools on the level of collaboration among staff members and with community members, as well as on staff development and support and teachers' ability to evaluate data to improve student achievement. The second category, Partnership Development, focuses on partnerships going beyond the school, including with other teachers within the New Tech Network and with higher education institutions, parents, other community members and local businesses.

Student Achievement is the final domain of the rubric. It evaluates the school's financial situation, including budget and sources of funding. It also

evaluates academic success in comparison to district and state content standards and standardised test scores and the extent to which students develop a professional work ethic and learn to be self-directed learners. Students should be able to demonstrate effective use of technology to conduct research, produce work, and collaborate with others. Finally, students should feel prepared for “next steps,” including higher education or employment.

4.5 Chapter Summary

New Tech schools have evolved from one school into a network of schools that is growing rapidly each year. Some of the enduring elements of the model, according to Schilling (2010:37), are: small school size, collaborative project-based learning supported by a one-to-one networked computing ratio, business and community partnerships and student activities that involve experiences of college work as well as experiences working with local businesses.

From the beginning, the first New Tech school was literally “the school that business built” in that the business community, to a great extent, created a school in their own image to supply its workforce. Some of those business influences still characterise the schools today. For example, school environments, as much as possible, are designed to mimic the professional work place and students are expected to behave as responsible adults. The focus on technology in these schools has shifted from teaching specific technology skills to utilising technology as an integral part of the academic process.

The New Tech approach relies heavily on PBL and collaborative teaching and learning, and the use of ICTs is essential to this approach. There is the assumption that this approach is the best way to develop deeper learning competencies in

students. There is also a belief that the current testing system is inadequate to gauge these competencies. It seems that despite the debates and criticism about flawed standardised tests, they still remain a steadfast tool used to measure school and student success in the current education system. New Tech schools remain saddled with the task of increasing standardised test scores, if they want to remain a credible school option, while at the same time working to enhance deeper learning.

I do not believe there is one education approach that is best for all students. The New Tech approach may be well-suited for some but not for others. It will be up to the reader to decide what they make of the model. The purpose of this thesis is not to judge its outcomes but rather to examine the efforts at shaping school culture to support the model and to illuminate how these efforts impact the lives of teachers and students and also how these efforts relate to broader issues relating to the call for radical school reform that breaks with the traditional model of education.

The following two chapters provide ethnographic accounts of life in two New Tech schools and I illustrate how school culture is shaped by the implementation of the model. I do this by exemplifying how members are enculturated and socialised into the New Tech model of education. I also describe how the New Tech value system shapes the practices, social interactions and individual behaviours of school members and how stakeholders describe their experiences working within the model, with an important aspect being their engagement with ICTs.

Chapter 5

Pacific Coast New Tech

5.1 Arriving at Pacific Coast New Tech

It is 8:00 a.m. on 25th February, 2013 and I am walking from the centre of town to Pacific Coast New Tech. It is a 10 to 15-minute walk, so I stroll leisurely, taking time to do a quick check of menus in the windows of a few trendy and highly acclaimed restaurants. Along my route I notice a variety of small to large, well-maintained wood frame houses with neatly manicured lawns. Some are lovely Victorian homes that have been carefully restored to their former glory. A number of them are family homes and a few provide quaint bed and breakfast accommodations for visitors.

I am pleased that I will have such a pleasant walk to look forward to each morning for the next five weeks. I arrive at the school around 8:15 a.m. and stop briefly to study the modern looking school building, which stands in stark contrast to the Victorian structures in the neighbourhood. On one side of the building there is a park with lots of green space and a small playground for young children. Directly beyond the side entrance of the building, under an overhang, there is a seating area with tables and benches. As I reach the main entrance, I am surprised to find that I don't need to ring a bell for entry and there are no metal detectors as in some of the other schools I have visited in the past. I enter through the unlocked doors and proceed to the administrative office where I am greeted warmly by a staff member who lets the principal know that I have arrived.

Ms. Parks, the principal, is very welcoming even though she is extremely busy. As we walk, she stops a few times to have some brief conversations with staff

about school business. I am grateful that she has taken time out of her busy schedule to take me on a tour of the school. Beyond the main office is a large, airy, open-plan space in the middle of the building. This area has many circular tables with chairs and there are four tall counters with seats similar to the counter-top seating one might find at a Starbucks coffee shop. These counters are equipped with electrical outlets for student laptops. This area is called the Hub and students eat lunch here or in the courtyard area off the side entrance. Students also have the option of eating lunch off campus. The Hub is also used by students to collaborate with classmates on school projects and for socialising before and after school. This area is equipped with a projection screen and there is room for a stage. It is an ideal space for the all-school meetings and other school events that I am told are held here. As I walk with the principal, I notice some students working on projects in the cafe. Some of them are using laptops. Wi-Fi is available throughout the building, which is no surprise, as all New Tech schools have a one-to-one networked computing environment. The building feels more like a small college campus or a creative corporate environment than a traditional high school.

Most of the classrooms have large floor to ceiling glass windows and doors so classroom activities are easily visible from the outside. In addition, the rooms are large. I estimate they are at least double the size of a regular classroom. Many of the rooms have student work posted on sections of some of the windows. There are three portable classrooms, or trailers, at the back of the main school structure.

The principal tells me that most classes are team-taught, with two different subject area teachers working together in the same classroom. She explains that the staff really values team teaching. I am anxious to hear teacher perspectives on the matter. Not all classes are team-taught, due in part to a situation triggered by

budget cuts at the local college. Students at Pacific Coast were taking language courses at the college but these courses became unavailable to them. Pacific Coast New Tech now offers these classes in-house and they are taught by a single teacher. There are still five college course offerings on the school campus. College professors come to the high school campus to teach these classes. Students also attend some college courses off campus. One of the graduation requirements at Pacific Coast is that students must earn 12 units of transferable college credits.¹² In addition, they must complete 10 hours of school service, 25 hours of community service, a 50-hour internship and prepare a personal portfolio. The school's graduation requirements exceed those of most high schools in the United States. Parents and students are made aware of this before students decide to attend the school.

I later asked Ms. Parks about the role of community partners, as I learned through my initial research that they rely heavily on them. She explained that the school has approximately 2,000 partners. Both parents and local businesses support the school by serving as panel experts to provide feedback to students on projects and a number of businesses provide internships for students and they help raise or donate money for various projects and activities. For example, some provide scholarships for senior students, which can be used to pay university applications fees or to purchase books for college, take college entrance exams or even to complete their senior projects. Additionally, one of the partners, a local business, donated money for staff members to meet once a month to enjoy a meal or another relaxing activity.

¹² High school students are not usually required to earn college credit as a graduation requirement. This is a specific requirement of Pacific Coast New Tech.

As the tour continues, Ms. Parks talks to me about each class and I take notes, jotting down teacher names and classes I would like to observe. I also have an opportunity to meet two very friendly students, a male and a female, both in year 12, their last year of high school. They are preparing items to be sold in the school store and we have a short conversation about their plans for the store, which is student-run. They have taken the initiative to develop the store, which currently carries a few school branded items and supplies. As Ms. Parks and I continue our walk, we notice a year 9 student who is chatting with another student in the hallway. Ms. Parks asks him what class he should be in during this time. He hesitates, saying he is returning to class after a restroom break. He clearly was not in a hurry to get back to class. Ms. Parks suggests that he stop chatting and return to class. He flashes a wide smile and heads off. There are no hall passes here, so students are on the honour system. They are trusted not to linger in the hallways.

When we get to the end of the tour, the principal gives me a copy of the school schedule and explains it to me. The school runs on a block schedule beginning at 8:00 a.m. Monday through Thursday, with a slightly different schedule on Fridays. There are three blocks in a day and each class lasts for two hours.

It is midway through the first block when the tour ends and I decide to wait until the beginning of the second block, 10:15 a.m., to visit my first class. Two students notice me looking around the Hub as I am trying to decide where to park myself and begin typing my notes. I must have looked a bit confused, as one student politely asks if I need help. I explain that I am just trying to decide where I should sit. She then gestures and asks, "How about this table?" Caught off guard by this unexpected gesture of kindness, I pause for a moment, thank her, take a seat and begin entering my first fieldnotes.

One of the teachers, Mr. Morris, notices me working in the Hub. He introduces himself, welcomes me to the school and lets me know he learned about my visit from a staff email sent out by the principal. He is the History teacher for a combined American History and English class. ‘This is perfect!’ I think to myself. I noticed this class during the tour and students were using laptops and textbooks simultaneously, which I found curious, as it was my understanding that online resources were replacing textbooks in New Tech schools. I waste no time asking if I can visit his classroom. He agrees but tells me that today won’t be very exciting because students will be using their textbooks to answer questions related to an upcoming project. I ask him about the use of textbooks and laptops and he explained that textbooks are used as a resource. The book covers certain content standards and he would rather use books than give lectures to cover the content for this particular session. He has received positive feedback from students regarding the occasional use of books for assignments and believes it is important for students to use books, along with internet resources, as they will need to use books in college and this is one way to prepare them for college work. Mr. Morris tells me that he will give me a copy of the entry document for the current class project. An entry document is designed to introduce a project, pique student’s curiosity and present the main question or, in New Tech terms, “ the driving question” for the project. He also offers me a copy of the project guidelines and the project calendar. I am excited to find out what’s going on in this class. I thank him and let him know I’m looking forward to visiting his class. Mr. Morris returns to his classroom and I continue observing and taking notes in the Hub.

At 10:00 a.m. students begin streaming out of classrooms, with some lining up for food outside the very small school kitchen. Others are gathered in the Hub

and outside in the courtyard area. I ask a student if this is the beginning of 2nd block and she tells me they are on a 15-minute “milk break” or snack break. There are no bells to signal when a class begins or ends. This is one of the non-traditional features of New Tech schools that mimic college and workplace environments. The noise level rises during the break. It is loud but this is to be expected and students are well behaved. Suddenly, I am startled by two shrill screams coming from a female student in a group with four other girls. I assume she is excited about something, as the whole group is laughing and engrossed in conversation. Most students are either standing in groups talking or sitting and eating. Some are warming their food in the two microwaves available in the Hub. Others are texting with mobile phones and a few are using laptop computers. There are no lockers here and students have left their backpacks unattended on the tops of tables and against the walls. No one seems to be concerned about theft.

The Classroom: Combined American History and English

At 10:13 a.m. the 15-minute milk break is almost over. Students, without being prompted by adults, begin to dispose of their trash and recyclables, collect their backpacks and head to their next class. I proceed to Mr. Morris’ class and am surprised by two things: the large number of students in the classroom and the size and décor of the room. Mr. Morris tells me there are approximately sixty junior (16-17 year old) students enrolled in this class. I think to myself, ‘Goodness, that’s a lot of students even with two teachers working together.’ It is the largest class he has had, partly due to scheduling challenges this year. The room is quite spacious. It accommodates all sixty students and there is still space to move around comfortably. Two desks, one for Mr. Morris and one for Ms. Jansen, his teaching

partner, are at the front of the room. There are no rows of individual desks as might be the case in more traditional schools. Instead, students are seated in groups at rectangular tables in comfortably padded, wheeled office chairs. The room is large enough to accommodate Mr. Morris' upright piano and his vintage console turntable. I learn later that he has a knack for sourcing free things and these items are two of his prize finds. In addition, there is a small library section to one side of the room. There are shelves with books, soft modular seating, and a tank with two good-sized goldfish. The large floor to ceiling windows let loads of sunlight into the room and printed on the window shades are the words "trust, respect, responsibility." I wonder if and how these values will manifest themselves in the behaviours of school members. This will reveal itself in time but for now I take a seat in the library section, ready to observe, and the calming sound of air bubbles emanates from the fish tank as class begins.

Ms. Jansen greets the students, saying, "Happy Monday." She lets them know that progress reports have gone out and that anyone with a grade below a "C" must put away their headphones and personal music. The typical grading scale is A, B, C, D and F. Students with a grade of "C" or better have the option of using their headphones to listen to the music of their choice while they read silently for the first 15 minutes of class. Alternatively, students listen to the soft harpsichord music that teachers have playing on Pandora (internet radio that can be personalised) in the background. Ms. Jansen explains that each day students begin with silent reading. Today students are reading one of five books related to their current class project. The titles of the books are: *Code Talkers* by Chester Nez with Judith Schiess Avila; *Desert Exile* by Yoshiko Uchida; *Rosie the Riveter* by Penny Colman; *Red Tail*

Captured, Red Tail Free by Alexander Jefferson; and *Letters from the 442nd* by Minoru Masuda.

The project statement and driving question for this project are: "Often, the stories of WWII tell of the great sacrifice and courage of American men. What was the nature of women's and minorities' contributions and experiences during this complex time?" The entry document reveals what seems to me a very exciting and challenging project. The top of the document reads "HBO PRODUCTIONS PRESENTS." There are three pictures on the document. One is of women workers during World War II, the second is a Tuskegee Airman (team of Black American fighter pilots and bombers), and the third is a Japanese man, woman and child during the Japanese-American Internment. The plan is for students to pitch an idea for an HBO miniseries about the hidden heroes of World War II. These heroes must include American women and minorities. The entry document states that students will need to determine the number of episodes and the topic for each episode. They must also discuss why each topic should be included and then determine how to present their idea. The entry document suggests possibly using a storyboard or PowerPoint presentation. The creation of a video or audio trailer for the series can also be created for extra credit. Students will have to answer questions posed by their teachers as well as questions from invited guests to demonstrate their knowledge of the topic. The guests will pose as "producers." They are actually community members who provide feedback on the finished projects. I am asked by Ms. Jansen to be a guest panelist and I happily accept. Feedback from an audience is a key aspect of PBL at Pacific Coast. Students have been asked to present a persuasive pitch to the producers and also to provide a synopsis of each episode in the miniseries. The episodes must include important historical details.

The project guidelines specify topics which are related to the five books previously mentioned. However, each group member must choose a “research report approach” and that person becomes the expert of the group for that particular approach. These approaches are described in the project guidelines and include: “the discrimination and limitations placed on minority groups; the experience of an individual (other than a main character in the selected readings); the legacy made by minority groups/women over time; the contribution of minority groups to the war effort. The final approach examines public perceptions and interactions with minority groups/women.” Students work on projects in groups. However, they are also responsible for individual assignments.

The Classroom: Combined English and Drama

On day two of my visit, I observe 1st year (Freshmen) students in the combined English and Drama class. I introduce myself to the teachers, Ms. Stevens and Ms. Johnson. They welcome me to the school and even ask me to provide informal feedback on their class at the end of my visit. The layout of this room is similar to the classroom I visited yesterday. So again, I take a seat in the library area of the room. Dramatic music is playing to quiet these very talkative students as they enter the classroom. Today students are working on scripts and making puppets for a performance they will conduct for younger students from neighbouring schools. The goal is to develop a performance that will persuade an audience to take action. Ms. Stevens reminds them that on 7th March they will have a practice performance in front of their classmates and they will receive feedback from a panel of community members. I am asked to serve on this panel and am quite excited about it, thinking the school members are keen to have me participate. It’s an ethnographer’s dream!

The feedback, given prior to the main performance, is meant to help students identify changes that need to be made to the script as well as any adjustments that need to be made to the puppets they have created.

In addition to the discussion about the upcoming performance, there is also a conversation about an assignment on persuasive notes and vocabulary words. As students begin moving into their groups, the dramatic music begins to play again. The music seems to work well to settle the students down and help them focus. Seated near me in the library area is a 4th year (senior) student working on her laptop. Her name is Faith and I ask her about the background music. She explains that some teachers play music from Pandora when students have a project workday (class time to work on projects with group members). Faith is the Teaching Assistant (TA) for this class. She helps teachers with errands or other tasks when needed. Today she is completing an assignment for one of her classes while remaining ready to assist the teachers if needed.

After my short talk with Faith, I walk around and observe a group of students using their laptops to practice reading their scripts. Another group is creating puppets. I ask a student in the first group to tell me about the project. Her group will be performing for 5th graders (10-11 year olds) and their topic is "Getting Outside and Active: There's a Time and a Place for Tech." She explains that the class was given a choice of several topics and they chose that one. I speak with another member in that group and ask if students do all the work for the project in class or if some of the work is done at home. She replies, "Both" and explains that the group uses Google Docs so everyone can add dialogue. Group members log in from home and work on the dialogue, adding to it and then discussing it. One of the group

members commented that she finds it difficult to communicate online because it takes her too long to type her thoughts into Google Chat but she does her best.

I continue to make my way around the room observing the groups as they work and I stop to speak with a female student. Her group will be performing a skit for pre-schoolers (children under 5 years of age). Their topic is “Don’t take animals out of the wild.” Another group is planning to take 5th graders on a hiking trip and have puppet characters appear at various points along the trail. Their puppet characters include a fox, rabbit, chicken and a girl and boy. This group also developed their script using Google Docs and the group works together in class as well as from their homes. One student in the group tells me that using Google Docs is really helpful because when he was ill and absent from school, he was still able to see the progress on the development of the script and he was also able to contribute his ideas on the Google Doc. As I listen to the accounts of students, I wonder how they organise the various ideas of group members in a Google Doc. One student explains that group members do not delete anything from the Google Doc. They highlight what they don’t think should be included and then add a note with an explanation. This student also tells me that several students have been ill in the past few weeks, so Google Docs has been helpful because “the projects won’t wait.” They have to be completed on time.

Both of the classes I describe above engage in highly collaborative group work as part of the PBL process and the projects have real-world relevance, with feedback to be given by a real audience. This is certainly in line with expectations outlined in the New Tech school success rubric described in chapter 4. In the scenarios above, particularly in the English/Drama class, one can begin to see glimpses of what trust and responsibility look like in action, with students trusting

each other to contribute to the group effort of script writing using Google Docs and students taking responsibility for contributing even when they are away from school.

From my first two days of observation, I get a sense that this school may indeed be quite different from the typical American high school that I described in chapter 2. My continuing presence in the school and interaction with school members will allow me to delve deeper into life at Pacific Coast High to see if my first impressions are correct.

I now move from my initial observations of classrooms to a discussion of teacher experiences at Pacific Coast. I provide insight into reasons for teacher satisfaction and also examine the challenges they encounter. I also illuminate important aspects of social relationships within the school and examine how teachers are enculturated into the New Tech model of education.

5.2 Teacher Experiences

Positive aspects of teaching at Pacific Coast High School

Teachers expressed a variety of feelings about their experiences at Pacific Coast High. I will first review the positive aspects. Ms. Stevens used the term “satisfying” to describe her experience of being able to have “deeper relationships with students.” Two other teachers contrasted their experiences teaching at other schools, where problem behaviours were a major issue, to their experience at Pacific Coast. For example, Mr. Harris, a mathematics teacher, said his experience at his former school felt like “unglorified babysitting” and he had seriously thought about leaving the teaching profession until he started working at Pacific Coast. He spoke positively about his arrival at the school but also discussed the heavy workload for teachers:

This [teaching at Pacific Coast] was such a breath of fresh air after that previous year [at my former school]. It was unbelievable how much better I felt and I went back to really enjoying teaching. With a small staff, you [have] to step up to the plate if you want to teach here. And it is incredibly rewarding. I wouldn't teach any place else. But it is an incredible amount of work. And I think everyone expects to have to put in a lot of extra hours.

Mr. Hopkins, the Digital Media teacher, expressed a similar sentiment about teaching at Pacific Coast, where behavioural problems are minimal.

Most days I feel honoured to be in an environment like this and truthfully I would not be teaching at all at the high school level if I was not teaching here. I just wouldn't do it. Chasing kids around, managing them, disciplining them is not what I want to be spending my time doing.

Similarly, Mr. Morris also talked about being fortunate to work in a school where,

I don't have kids threatening me. I don't have fights every day that I'm breaking up. We have an amazing amount of maturity for the most part, of respect from our students, and responsibility from our students that I think is non-typical.

As will be evident later in this chapter, student behaviour is greatly influenced by the development of school culture. It is not simply a matter of students enrolling from one area of the city with well-behaved students. The school accepts students from within as well as outside of the district. Pacific Coast is not immune from anti-social behaviour. However, the consensus from both the teachers and students I interviewed is that they have to deal with far fewer behavioural issues than other high schools. One aspect of the New Tech value system that seems to shape behaviour is the very deliberate effort to build relationships between teachers and students as well as develop deeper relationships among the student body. My interviews and observations indicate that teachers and students get to know and learn about each other on a more personal level. Ms. Jansen shared one example

that illustrates an aspect of her relationship with students. When she schedules a planned absence from school, she lets her students know why she will be absent. If she has an unplanned absence, students will ask her where she has been when she returns to class. This is also a behaviour that I observed in other classes. For example, while observing in the English/Drama class, Ms. Stevens told her students she would be absent the next day and asked them if it was okay if she did not share her reason for the absence. The students were fine with her not sharing and I suspect the absence may have been due to a sensitive family matter that I learned about later. Certainly, it can be argued that it is not the business of students to know why their teachers may be absent and teachers choose whether or not to share this information. However, it could be argued that this is one way that teachers build relationships with students.

Pacific Coast is a small school of approximately 400 students and Ms. Jansen explained that this contributes to the ability to develop closer relationships, which is essential to the collaborative mode of working within the New Tech model.

I do think something that really contributes positively to the culture here is the size of the school. I recognise every kid here for the most part ... and I just feel like that kind of accountability is really powerful when it comes to behaviour or when it comes to a student feeling really cared for... I feel like I've hit my stride in my relationships with some of the students ... We do care and I feel like that kind of trust in a relationship usually contributes to them being more motivated to succeed in your class.

I observed other situations that revealed aspects of relationship-building. For example, one Friday, during an advisory session, the student body watched a video of their teachers talking about their experiences in college. Students at the school conducted interviews with teachers and then created the video. After the

viewing, students were given the opportunity to attend sessions with teachers to hear more about their experiences and to ask questions. Some teachers shared very personal stories and I think it is through these and other encounters that students get to know their teachers as human beings. I also heard teachers in other classes share information about their families and about some of their personal struggles. The small size of the school and the willingness of teachers to share aspects of their personal lives with students is one salient aspect that supports the goal of building relationships, which seems to work in conjunction with other efforts to encourage positive student behaviours.

In addition to teachers' positive comments about student behaviour, they expressed other positive feelings. For example, Ms. Tod, an English teacher describes her experience:

I've loved it [working here]. The kids are amazing and there's such a community. I remember having lots of friends who argued that technology was going to make kids more distant. But there's such a tight community here that they really do function like a big family.

Ms. Mitchell, a biology teacher, echoes the sentiments of Ms. Tod in describing the school as having a family feel. She talked about what it is like for her to work at the school:

It's challenging but also really comfortable. It's small enough to where it does feel familial. Just like in a family, there are people I get along well with and there are people that I struggle to maintain a positive relationship with. But there's no one that I don't care about and I [also feel] cared about ... so that's good. And I just love the students and I'm constantly reminded everyday what a great school that I get to work at.

Many of the positive feelings that teachers expressed have to do with positive student behaviour and close school relationships. Both are shaped by the fact that

there are fewer than 400 students¹³ at the school and that deliberate culture-building efforts are employed. Teacher narratives about these efforts are discussed in section 5.5.

Teachers expressed numerous positive aspects of working at the school. However, they also shared some serious challenges. I address these issues in the following section.

Challenges of teaching at Pacific Coast High School

One of the challenges of being a teacher at Pacific Coast is the workload. Mr. Harris shared with me that he typically works 70 - 85 hours a week and that he is grateful for holiday breaks so he can try to get caught up on the work. The workload is an issue but what seemed to really bother him was what he perceived as a lack of appreciation for teacher efforts on the part of administration. He explains,

I think everyone expects to have to put in a lot of extra hours. And in the past it's been really appreciated. I don't think it's quite so appreciated right now. It's more of an expectation and not much in the way of appreciation.

I asked Mr. Harris if previous administrators had shown appreciation and what that looked like. He explained that it was expressed with comments and an administrator asking if it was possible for him to take on some extra responsibilities with the understanding that it is a lot to ask given all the work he currently does. He complained that currently the attitude from administration is more like,

'Here. You need to do this and you have this time period.' Like you're not doing anything else so here's another 30 hours of work to do in the next 2 weeks.

These views were also expressed by one of the relatively new teachers at the school. She spoke with me about her struggle to deal with all of the teaching

¹³ Some U.S. high schools, like Evanston Township in Illinois, have over 3,000 students.

responsibilities and additional duties beyond teaching. At the time of our conversation, she was struggling to find balance. She explains,

I feel like the office [administration] underestimates how much time it takes to plan even really simple looking lessons. So I feel like sometimes with the extra duties that I'm asked to take on, it's just assumed that, 'Oh you're doing fine in the class. You can just absorb that.' Or even - we got 30 extra students ... not one acknowledgement of the hours that adds to every single thing we grade. So I feel like when you're protective about your time related to your class, you look like a bad teacher or you look like you're not a team player. I think that's just sort of the office/teaching disconnect.

Her teaching partner shared that the school has historically had a very high turnover rate among teachers and even though the teachers who left have said the reasons were to pursue other opportunities, he has his own theories about why so many teachers leave. One of these is the workload, particularly, the number of adjunct duties required of teachers. He described his experience at Pacific Coast using a line from the novel *A Tale of Two Cities* – “the best of times and the worst of times.” He prefaces his conversation about the challenges and frustrations with an acknowledgement that he is fortunate to be in a school that does not struggle with many of the behavioural issues that plague other schools. He spoke with me about his long 10 to 14 hour workdays. Like others, he also feels that the school administration is unappreciative and not “empathetic” when it comes to assigning adjunct duties. It was acknowledged by the principal, several teachers, and members of the support staff that, because the school is small, everyone is expected to take on extra duties. School dances and other activities are obviously important to students. Certainly, a small school environment has advantages in terms of building relationships, as discussed earlier in this chapter. However, one of the challenges is being able to support extra-curricular activities and events with such a small staff. I wondered if some activities could be eliminated to ease the burden on

teachers. Certainly, schools exist to educate and support students but more consideration is needed to develop strategies that prevent teacher burnout, which ultimately results in good teachers leaving the profession.

Several teachers spoke with me about the benefits and challenges of student empowerment. Students have a voice in how the school is run and they take on leadership roles within the school, initiating programs and activities, mentoring younger students and leading school tours for visitors. However, this empowerment sometimes leads to students feeling entitled and the power dynamics between teachers and students seem unbalanced to some teachers. For example, Mr. Morris feels that the level of empowerment given to students is excessive. To illustrate this point, he gives an example of a student who conducted a survey for an activity during a school advisory session. The principal made the decision to implement this activity even though the advisory team already had an activity planned for that date. In this instance, Mr. Morris felt that the student was “able to override that process.”

He gave another example of students telling teachers that they won’t be in class on a particular day because they will be leading a school tour. The school has numerous visitors each year and the students are responsible for conducting the tours. Mr. Morris feels very strongly about this saying,

So I have grown increasingly frustrated with the fact that it often feels like students have more voice here than staff and teachers. And they have more power to make decisions. So that sense of empowerment that they have is at times really out of whack. And I think that it’s something that at times we create these student monsters that get overly empowered.

Empowering students is a major focus of the school. Ms. James discusses the importance of this and also highlights the challenges of finding a balance. She explains,

It's hugely about empowering the student but also teaching them that having that power doesn't make them entitled. It's a line that they need to figure out because they're young and you give a kid power and then they think they're entitled. So figuring that out and being able to ask their ideas and ask what they think but also making them aware that they're not the boss. They don't get to decide everything.

She goes on to explain that student empowerment at the school is quite different than what she has seen at other schools. Teachers want students to have a voice and they want students to know they care about what they think. However, at times, students take things too far. I asked Ms. James what it looks like when students feel entitled and she described it as like "a bossy teenager" talking to a parent. She explained that school administrators will intervene if it becomes a major issue. Alternatively, conferences with teachers and parents are scheduled to deal with the issue. I did not personally observe any "bossy teenager" behaviour. However, I can understand how this could happen, as students are encouraged to be independent and, as a result, some want to test their newfound independence. It is indeed a balancing act, as adolescents are expected to exhibit adult behaviours. Some teachers complain that there is a lack of balance.

In addition to issues of power between teachers and students, there are also tensions around power relations between teachers and administrators, particularly around the process for making school decisions. The principal described the staff as "historically very collaborative and very flat" in terms of hierarchy and teachers have been used to a consensus approach to decision-making. However, she explained that her impression during the interview for her position, was that one of her goals should be to move things forward. She explains,

I had the perception that perhaps some of the consensus approach we had taken historically may have actually slowed down our ability to maintain a cutting-edge innovative status.

The principal describes one of her strengths as being “action-oriented” while 80 to 85% of the school staff would be considered “visionaries” according to the results of the Clifton StrengthsFinder assessment taken by school staff at her request. She feels this is one of the reasons for the tensions around her push to speed up decision-making processes and her “faithfully honouring” a decision-making rubric that lays out the kinds of decisions that are to be made by administration and those made collaboratively by administration and staff. This rubric, which was developed by school members for this school, was in place before she arrived. Some teachers feel that she is sticking to the letter of the law with the rubric and could be more flexible. One administrative decision that caused a great deal of tension involved shifting some collaborative conversations to online forums due to the limited amount of time available for all-staff in-school meetings.

There are protocols for both in-person and online discussions. For online discussions, teachers are asked to submit their ideas and comments online within a designated timeframe for their input to be considered. However, for some teachers, discussion forums are not a viable alternative to face-to-face discussions. Ms. Stevens explains,

My nightmare conversation is an online discussion. Sometimes our principal will say, ‘Here’s a question.’ Then someone makes a comment and then people comment to that comment. Then someone starts a different discussion thread under the same umbrella and now that’s a separate discussion going on. It’s so easy to get lost. It’s so easy to have no idea what is going to be decided. How is it going to happen? I hate that form of discussion.

Her teaching partner echoes her sentiments, saying the discussions are difficult to navigate and it is hard to determine who is responding to a particular post. According to Mr. Allen, one of the History teachers, the tensions raised by the use of online discussion forums has lowered morale among teachers because they

feel their voices aren't being heard. Many of his colleagues "want more live exchanges of ideas and concerns." He explains,

Sometimes we feel like the protocol has been so firmly established that we're only allowed to discuss an issue in that online forum and if we don't do that, then when we're in our meeting our voice can't be heard. So some of us feel shut down by that kind of a protocol.

Although Mr. Allen is not a fan of more face-to-face meetings, he understands the feelings of his colleagues.

Ms. Mitchell has a very different view on the use of discussion boards for collaboration. She confirms that the staff is divided on the issue. She understands the importance of personal interaction for some of her co-workers and that some feel like online discussions are "an extra burden." However, she is in favour of online discussions and feels the medium provides some equality among the many voices:

I tend to lean toward tech because it takes away who's speaking the loudest or the longest. It gives everyone an equal voice. It's really hard to break conversation norms in tech. I like the equity that comes along with tech discussions when we're not able to get somewhere productive in an in-person session.

The teachers here are very passionate and some are very opinionated. I heard some very loud voices in the group while sitting in on some professional development meetings and in general conversations with people. So it is understandable how the online conversations would be more equitable for some. However, for others, according to what they conveyed in their interviews, the strict adherence to limiting some conversations to discussion boards alienates them from the participatory process.

Discussion boards are not the only challenge for teacher collaboration. The use of Google Docs and even email poses some challenges because of the volume of

emails teachers send and receive and the Google Docs used for collaborative purposes. Ms. James spoke with me about the need to better organise the numerous Google Docs by using Google folders. This is something teachers were just learning about at the time of my visit.

I would caution those who see these challenges as simply teacher resistance to the use of certain technologies. The school principal talks about the integration of technology at Pacific Coast, commenting that,

The pervasive seamless integration of technology is part of our culture. At other schools, people are resistant sometimes to jumping in and learning technology. But at this New Tech, you just don't opt out of Google Docs and of Echo and of project briefcases. It's not perfect enough yet but nobody is opting out. I don't need to light a fire under people around using technology.

Teachers could not opt out even if they wanted to as the teaching and learning, as well as general communication within the school and between other Network schools, is closely interconnected with the technology. The use of technology seems to be woven into the cultural fabric of Pacific Coast. However, I would not describe it as seamless. When it comes to collaboration among teachers using online forums, there are ripped seams, which if not mended, may cause further damage to the collaborative element of the cultural fabric. Collaboration is a key aspect of the school culture, as is the use of ICTs. However, if the use of certain technologies hinders the process of collaboration for many participants, then serious consideration is warranted to determine how best to balance the needs of those who feel that discussion forums provide a way to expedite the decision-making process with accommodating the needs of those who feel, as Mr. Allen put it, "shut down" by the process. The use of ICTs is not always problematic and section 5.4 provides a

more in-depth look into the variety of ways in which teachers utilise ICTs and the complexities that surround that use.

In summary, teacher satisfaction at Pacific Coast High is linked with the positive behaviour of students and also with the satisfaction of developing close teacher-student relationships. Even so, there are power issues, with teachers feeling that students, at times, have too much power and that this can undermine teacher efforts. It is felt that the principal could do a better job to mitigate problems in this area. Other challenges that teachers expressed, for example heavy workloads and the use of discussion boards for decision-making, highlight some of the tensions between teachers and the principal. The small school environment is certainly conducive to building closer relationships but it also means that staff take on more responsibilities. However, some teachers felt that the principal did not fully comprehend the time commitment involved with added duties and they also expressed feelings of not being appreciated. Lastly, a definite power struggle exists regarding decision-making processes, with the principal working to speed up the process and teachers wanting to stick to a consensus model. One of the non-traditional features of this school, as described by the principal and several teachers, is that it has a flat hierarchical structure. School staff members are full participants in decision-making for the school. There is an appreciation for the collaborative process. However, oftentimes it is a very slow process.

I have discussed some of the positive aspects and also some of the challenges that teachers face at Pacific Coast and now I turn to the process by which teachers become “New Tech” teachers. Given my focus on school culture as it influences teaching and learning, I wanted to understand how teachers become enculturated into the New Tech model of education. As discussed in chapter 2, enculturation

involves a process of cultural transmission as well as a process of internalisation.

The following section explores teacher experiences as they relate to these processes.

Enculturation into the New Tech Model

New Tech summer conferences

Teachers are immersed in New Tech culture during two summer conferences hosted by the New Tech Network. The conferences serve as a vehicle for enculturation into the New Tech model and I spoke with teachers about their experiences of the conferences to gain an understanding of how the New Tech Network works to transmit their particular beliefs, values and approach to learning and also to understand how teachers internalise the approach.

Ms. Thomas, a newly hired Spanish teacher, participated in the new teacher training track at one of the conferences prior to starting her job. Ms. Thomas spoke with me about learning to use Echo, the New Tech Network's online learning management system, as well as learning the basics of PBL in the context of a foreign language class. She felt that the conference provided a "good introduction" to PBL and she is looking forward to attending the conference next year, when she will be able to attend some of the seminars intended for those who already have experience as New Tech teachers.

One of her takeaways from the conference was the realization that, "You're more of a facilitator and you're not really a teacher ... in the traditional sense of teacher." She talked about needing time to process all the information from the conference and she stated that she needed practice implementing the model to better understand it. She has sought and received advice and assistance from her co-workers. Ms. Thomas also utilises online groups like Edmodo and Edutopia to interact with other teachers who teach using a PBL model. Reading the discussion

board threads of language teachers is particularly helpful to her, as she points out that language is a skill, which she sees as requiring a different learning approach from other school subjects. “So it’s like teaching someone an instrument, you don’t just hand it to them and say, ‘your project is to learn to play this song’.” She has had to learn how to structure her projects to meet the learning needs for her particular subject area. This raised a concern about the appropriateness of PBL for all subject areas. It could be that PBL makes more sense in a second-year language class when students are more fluent. Mr. Harris also talked about PBL, explaining that it works extremely well for language arts classes. However, he feels that math, science and Spanish require sufficient foundational knowledge and a more “linear approach” to learning. He uses a mix of both project and problem-based learning.

Ms. Thomas’ description of the new teacher track at the conference coincides with other teacher descriptions. She explains that the sessions are run “like the schools run their classrooms,” meaning that teacher groups are formed and they are given a project to complete and the information for that project is accessed through Echo. The sessions are designed to provide teachers with the same experience their students will have working in a highly collaborative PBL environment. One of the benefits she experienced while working in a collaborative group was being able to ask other group members for clarification when she did not understand something. She compares this experience to situations in her classroom when students may be talking during class but sometimes they are asking peers for clarification about a concept or an assignment. This has taught her not to assume that students are necessarily off track when talking to their peers during a lesson.

Ms. James, a Digital Media teacher, recalls that the conference helped her to understand how to use Echo and how to facilitate PBL in the classroom. She

describes it as a very structured experience that introduces each component of the project: locating the documentation in the project briefcase in Echo; the entry document, the project rollout, and creating a list of “knows” and “need to knows” to help direct the teaching. The “know” and “need to know” lists are generated by the students to determine what needs to be taught or explained to help them complete projects.

Mr. Allen remembers meeting his teaching partner at the conference and starting to build a relationship and plan their first project together. Most of his time was spent planning with his partner, so he felt like he did not get a sense of the other seminars and activities available at the conference. He did feel that the facilitators of the sessions understood the model well and were quite helpful to him as he developed an understanding of how to create projects.

Of all the teachers I spoke with, Ms. Jansen had the most critical view of the conference. She explains, “I don’t feel that I take away a lot from conferences as far as quantifiable learning or resources.” She felt that getting to know her co-workers and bonding with them was a valuable experience. However, the conference for her felt like, “a lot of cheerleading like, ‘We’re great! We’re doing this! It’s amazing! We’re the best!’” She goes on to explain what she felt was missing:

So when the model is always held up on this pristine pedestal and people are kind of fumbling their way through trying to reach that, I feel like it would be really valuable to hear about some really practical applications, how they go, how it looks when things don’t quite work out ... It was much more sort of the best-case scenario and not incredibly practical but more sort of idea-based.

It was recommended that she not follow the new teacher track, since she had already been teaching for six months at a well-established New Tech school. She felt

that this hindered her from receiving the support she needed, as people recognise Pacific Coast High as one of the excellent demonstration sites.

Mr. Hopkins, a Digital Media teacher, had a very different take on his conference experience, probably because he is a veteran New Tech teacher and he presents at the conferences. He very much appreciates having the opportunity to meet with “like-minded people” and feels it would be an isolating experience to teach following the New Tech model if they were not able to discuss their experiences with others following the model. He elaborates, saying,

When I get together with other people who are involved in risk taking like that, I can hear kind of like a vision of what a best practice is. That starts kind of forming whereas otherwise it's just me kind of, 'Oh I think I'm going to try it this way today and see what happens.' But if I can hear another teacher say, 'Yeah I tried that before and it just completely bombed.' Or, 'Have you thought about this? I tried it this way and it worked really well.' I think that's just such a critical part of this.

Mr. Hopkins' experience was in contrast to Ms. Jansen's experience. Once again, he has been a New Tech teacher for much longer than her and he has participated in several conferences and has established relationships with many New Tech teachers. It may be a matter of Ms. Jansen getting to know more people and developing those sharing relationships and that she simply has fewer years of teaching experience. It may also be an indication that the New Tech Network should consider holding sessions that specifically address the challenges some teachers face implementing the model.

Additionally, there are a number of sessions for those who have already gone through the new teacher track. The information one takes away from the conference depends on the sessions one chooses to attend and the questions raised during the sessions. My personal experience of the conference was a mix of best-

case scenario sessions and sessions in which presenters shared their challenges and the strategies they utilised to overcome them. Also, determining what works is oftentimes dependent upon the group of students one teaches. What works well for one group may not work at all for another. However, having several ideas to try can be extremely helpful and Mr. Hopkins appreciated the various ideas and advice he received from colleagues at the conference.

Some teachers were a bit vague about their conference experience, simply saying that they “got a lot of out it.” One possibility for this vagueness may have been because their attendance was in the distant past. Newer teachers and those who attend on a more regular basis tended to share more detailed information about their experiences.

The conferences are part of a deliberate socialisation process, as discussed in chapter 2, employed by the New Tech Network to prepare teachers to work within the model. They are immersed in the teaching methods and process of relationship-building by working closely with other teachers to complete projects. Through this process, the importance of teamwork is emphasised. Additionally, teachers come to understand the benefits and challenges of collaborative PBL. Teachers are also introduced to Echo and experience first-hand how teaching resources are stored and utilised to support PBL.

The peer-to-peer support network

In addition to the New Tech conferences, a peer-to-peer network also supports the enculturation process for teachers. There are two New Tech advocates at Pacific Coast who provide peer support for teachers to ensure that PBL is

implemented with fidelity. The advocates also provide support in a number of other ways. Ms. Mitchell, one of the advocates and the Biology teacher, explains her role:

It's really about doing what I can to organise professional development for fellow staff members, one-on-one meetings to support people, a little bit of tech support too if people need help with Echo. Any kind of technology issues I help where I can.

She explains that most times teachers will ask her directly for guidance. However, on rare occasions, a school administrator, after observing a teaching session, may determine that guidance is needed. She further states that sometimes teachers just need "somebody to sit in on their presentations and to help." Her assistance varies depending on the needs of the teacher.

Mr. Richards is a part-time advocate. He spends approximately 20% of his time as an advocate, another 20% as a teacher, and 60% supporting teachers in the district on how to implement PBL. In explaining his role, he simply states, "My job and my goal is to support other teachers in becoming successful at using project-based learning."

Pacific Coast New Tech is a demonstration site and one of their responsibilities is to provide observation and professional development experiences for staff at other New Tech schools as well as staff at non-New Tech schools interested in PBL training. Mr. Richards is heavily involved in these events. He explains why he believes PBL has been very successful at Pacific Coast:

When you've got a culture and structures in place at a school to be successful and structures that are conducive to project-based learning, then you have more success. New Tech is a prime example of that. So teachers know they have to do project-based learning. Our collaboration time is structured around that. Just everything is built around that so it's more successful there. We see successes in environments like that.

He contrasts this with the challenges of working to help implement PBL in other non-New Tech schools in the district that lack the culture and structure of schools more committed to the method. He gives an example of schools where maybe one teacher is doing PBL and the others are not. This sometimes leads to “push-back” from students, as the expectations in their other classes are of a more traditional nature. He makes clear the importance of having a school-wide focus on implementing PBL with fidelity if it is to be successful. He stresses the importance of “making sure that you have a school-wide vision and a school-wide strategy for supporting project-based learning.” Part of that strategy at Pacific Coast includes training at New Tech conferences and ensuring that an extensive peer-to-peer support network is in place.

Pacific Coast is not without its own challenges when it comes to facilitating PBL as Mr. Richards explains:

The more challenging piece is the adaptive work. So how do you change someone’s thinking and how do you get them to change their habits? Things that are not something you can just quickly fix.

One of the areas of focus for school leaders at the New Tech Annual Conference in 2012 was adaptive versus technical leadership. The latter is concerned with problems that can easily be solved. The former is much more complex and Mr. Richards makes reference to employing that kind of leadership when helping teachers develop fidelity using PBL. There are instances where teachers may think they are doing PBL but need a bit more “coaching and adaptive work” to see how their practice can be improved. This requires teachers to think in a non-traditional way about the teaching and learning process. The advocates further develop what was learned at the conference, helping teachers to enhance their understanding of PBL and their everyday practice of it. In addition to the support of the advocates,

teachers also ask other teachers in the school for help if needed. For example, Ms. Thomas spoke with me about her relationship with the school advocates and the other teachers at Pacific Coast:

[The school advocates] have a deep understanding of what the model is and how to tweak it in different classrooms and they give really good feedback. I've emailed them countless times with sometimes silly sounding questions. [Sometimes you] just want advice for forming groups and different ... strategies they've tried. I also have reached out to just any of the other teachers here. I think we're lucky as a staff that people are so willing to collaborate. No one has a closed door.

Following the example of her co-workers, Ms. Thomas has reached out to a newer part-time teacher at the school, offering her assistance if she needs it. She explains, "I think it really helps the culture of the school even for someone new. I have very little to offer but I may understand something she's struggling with." The teacher support network extends beyond the advocates and includes other teachers and staff members. I also observed more formalised sessions where groups of teachers met to discuss how to improve student performance as well as sessions where teachers provided feedback on projects for colleagues. The feedback sessions or "peer project review" are another example of the highly collaborative processes at work at Pacific Coast. It is discussed in detail in section 5.3.

Teacher socialisation and enculturation proceed through a peer-to-peer process as well as through structured training and other professional development activities provided by the New Tech Network. Additionally, each school is assigned a New Tech coach who visits the school several times a year to provide training and support. Although teachers receive the same training, the experiences of the training and levels of internalisation may differ between teachers. Reasons for those differences include years of teaching experience, subject area and general

understanding of the conference training. The school advocates, peers and New Tech coach all work to deepen teacher understanding of the model and thus deepen the levels of internalisation in ways that may shape teacher practice.

Pacific Coast has a very collaborative culture for teachers. This is nurtured and developed at the conferences and the process continues at the school site. The following section examines the benefits, tensions and complexities that exist within these collaborative teacher relationships.

5.3 Teacher Collaboration

Peer Project Review

Teacher collaboration extends beyond subject areas and includes a process called *Peer Project Review*, a session that takes place most Fridays, in which teachers present a project they have developed for students. In other New Tech schools, this process is called *Critical Friends*. However, the principal and one of the teachers explained that this term has fallen out of favour with the staff at Pacific Coast because some argued that it had negative connotations. During peer project review, teachers provide questions and feedback on the project being presented.

I observed Mr. Andrews and Ms. Bishop, the Political Science and English teachers, share their upcoming project with the group. The presentation started with an animation they created depicting them talking to each other about the project and explaining the requirements. The animation serves as the entry document for the project and the script is available for students to view so they don't have to remember what was said in the video. This project requires students to create a satirical news show around a particular novel that they will read. Students will have a choice of several novels, all of which are relevant to issues discussed in their political studies class. The previous year, one group of students

read *The Handmaid's Tale* and incorporated those ideas into their news show. The teachers showed a clip of that show which was posted on YouTube.

There is a specific protocol for peer project review which is standard across all New Tech schools. Mr. Davis, the Health/Gym teacher, is the moderator for this session and after the presentation, he asks the group if there are any clarifying questions for the presenters. Several questions are asked about various aspects of the project. For example, there are questions about the assortment of books students will have to choose from, the type of equipment that will be used to record the shows, and whether the students from the previous year were given feedback by anyone outside of the school. Other questions were about the timeframe of the project, how groups will be formed, and if teachers have considered the reading levels of their students. Mr. Andrews and Ms. Bishop respond, saying that the Digital Media teacher was consulted and students will ask his permission to use equipment to record the shows. Additionally, they are keeping in mind students' lexile levels to assist them with their book choice. Students will have to write an essay explaining why they want to read a certain book and then the teachers will allow students to "speed date" (read the description and a short portion of the book) so they have an opportunity to determine which book they prefer.

After the clarifying questions have been answered, the session moves on to the "I Like" segment. This is when teachers share what they like about the project. Many commented that they loved the animated entry document, saying it had the important information and it was humorous and also illustrated the good rapport between the team teachers. The feedback continued with others liking the idea of speed dating a book and using classic novels that are college prep combined with an engaging project. Another commented that the project involved critical thinking on

a deep level about the economic system of a different time period as well as the economic system of today.

Following the “I Like” comments, teachers voice their questions and comments using an “I Wonder” statement. For example, one teacher comments, “I wonder how the local community can be involved in the project?” The list of “I Wonders” is a long one and includes questions about scaffolding for the news report; the critique of fictitious aspects of the novels being compared with the real economic systems of today; and the involvement of numeracy in the project because of the focus on economics. Another “I Wonder” is concerned with students seeing the themes as personally relevant or if themes are so big that students may not see how they are relevant.

After the “I Wonder” comments, teachers participate by providing suggestions or “Next Steps” to the presenters. There is no down time between comments and teachers rapidly fire off their ideas. One teacher makes the suggestion to have students use the recording studio and have students take charge. Another suggests adding the “so what?” question to help with analysis and significance of events. Someone else recommends that they reach out to a current journalist who focuses on the topic. Another teacher voices an idea to use a YouTube clip from John Stewart or Stephen Colbert (political satirists) so students see how a satirical news format is used. Someone else expands upon this idea and suggests trying to share student work with John Stewart possibly via Twitter and getting him to tweet back. Mr. Andrews and Ms. Bishop sometimes take notes during the succession of ideas from their colleagues.

The final step in the process is to have the presenters respond to some of the suggestions. Ms. Bishop talked about the difficulty of combining economics with

novels but said economics is the primary focus and both her and Mr. Andrews agree with the suggestion that novels by Mark Twain and Charles Dickens would be great for learning about economics. They also like the idea of watching clips from the Daily Show with John Stewart and feel it would be beneficial for students.

As an outsider, I found this process a bit overwhelming because the protocol involved a succession of numerous questions and comments. It required a good deal of concentration, on the part of the presenters, in order to respond. I understand why the protocol is needed, as it is easy for a very vocal group, like the Pacific Coast staff, to spend too much time on one question or comment. It also allows the presenters to respond to what they feel is most relevant to their project. What stood out here is the willingness of the group members to provide feedback to support their colleagues. This session illustrates one aspect of the non-traditional collaborative nature of the teaching at Pacific Coast. Teachers are not working in isolation but are instead sharing and providing feedback across subject areas.

Teacher partnerships

Teaching partnerships are another element of the collaborative culture at Pacific Coast. As described earlier in this chapter, this involves two different subject area teachers combining content and working together in the same classroom with a group of students. These partnerships are an essential aspect of the New Tech model. They are extremely successful for some teachers and an extreme challenge for others. How partners come to work together varies depending on the circumstances and timing of the hiring process. Ms. Johnson, who was first employed first at Pacific Coast, met Ms. Stevens when she worked as a long-term substitute teacher for the school. Ms. Stevens accepted a position teaching at

another school but Ms. Johnson kept in touch with her and asked her to apply for the position as her teaching partner when it became available. She felt that the two of them would have a strong partnership because they have a strong work ethic and are “willing to balance and go back and forth and listen to each other, which you need.”

When there is a teacher vacancy at Pacific Coast, the teacher who will be working with the new hire is on the interviewing panel whenever possible. Mr. Morris explained that he has had the final say on the hiring of his last two teaching partners and he feels fortunate to have had extremely good experiences with each of the four teachers he has been partnered with. He describes the team teaching environment as “phenomenal.” Interestingly, he and some of the other teachers refer to the teaching partnership as a “type of marriage” and say that students can easily pick up on problem partnerships.

Two teachers spoke with me about team teaching situations that have gone terribly wrong. Mr. Morris explains,

Both past and present, I’ve talked to teachers who are dealing with extremely dysfunctional team teaching situations [ranging from] being verbally abusive to sabotage.

Ms. Johnson has had a problem partnership in the past, and speaks from experience:

When you’re thrown into a partnership, it’s kind of dicey. It’s like a marriage and you have to work things out. If you’re constantly being sabotaged by your partner, it [creates problems with trust]. Or, if you don’t have the same work ethic and you find you’re doing all the work, then that makes you feel kind of like this isn’t an equal partnership.

She goes on to explain that if you have a problem partnership, you can work with the principal to try and make it better. But she admits that sometimes it cannot be improved and the partnership should end. However, Mr. Morris feels that

administration does not do enough when there are serious conflicts between teaching partners.

I think that administration has hoped that the situation will go away. Unfortunately, complaints at times were not only ignored but attacked. It's a really serious issue that hasn't been addressed. Oftentimes it gets put on the teacher that is bringing the issue up. I think that teachers have left because of it – because they had that situation without feeling like they've had support from administration.

He went on to say that some teachers are uncomfortable complaining about their partners and are having a very difficult time. In some of these situations, the teacher who is causing the problems eventually leaves or the teacher who has the complaint leaves because they don't feel supported.

Another teacher, Mr. Harris, came to Pacific Coast after teaching for six years as a solo teacher. It was extremely difficult for him to adjust to working in a teaching partnership. He describes himself and his teaching partner as “Mr. Know-it-alls who are always right about everything.” This led to six months of fighting “like cats and dogs” when they first started working together. Mr. Harris also talked about the awkwardness of team teaching in the classroom. For example, how does one teacher let the other know when to take over the conversation? He laughs as he describes how he and his teaching partner use hand signals to indicate a transition.

Team teaching for Mr. Allen is a “completely different animal” than teaching solo. He struggled with having all of his expectations clear when he worked as a solo teacher and this is also a struggle now that he is in a team teaching relationship. It is the planning and the grading with a partner “not in your own time and not in your own way” that is the most difficult for him as a team teacher. He enjoys the performance part of teaching with a partner and likens it to the difference between

“going on stage and doing a monologue versus being in an ensemble production or singing in a solo production versus singing in a choir.”

Most of the teachers I observed seemed to get along well. However, I did sense some tension with one pair. There seemed to be an issue around teaching practice, with one feeling like the other was not really teaching, in terms of actively imparting knowledge to the students. This may be due to differences in understanding the New Tech approach to teaching. This situation seems relatively minor and easily resolved compared to some of the serious problems that have occurred within partnerships and, according to several teachers, these issues have not been dealt with in a satisfactory manner. The New Tech Network might do well to examine more closely the on-the-ground realities of teacher partnerships and help schools develop strategies to better deal with relationship problems.

The traditional teaching experience has usually been one where teachers work in relative isolation, in their own individual classrooms. Working within the New Tech model decentres the role of the individual teacher, who is no longer the sole person responsible for the education process in the classroom. Some partnerships achieve harmonious working relationships within in this model, while others experience ongoing, sometimes extreme tension.

Like partnerships, the use of ICTs is also being used to decentre the role of the teacher, as students utilise resources on the internet to supplement their learning. Earlier in this chapter, I discussed teacher challenges with the use of ICTs, specifically online discussion boards, for decision-making purposes. The following section further describes teacher experiences of ICT use. It illuminates how the New Tech model, specifically the role of teacher as facilitator, shapes the use of ICTs for the teaching and learning process.

5.4 Teacher as Facilitator and the Shaping of ICT Use

My knowledge kicks things off now instead of serving as the ultimate authority, which for some students they struggle with that because they feel like well you're the teacher. That's your job ... to be the ultimate authority. They struggle with that when I refuse to answer some of their questions that I can do because of their access to technology. When they ask me, 'What was it that Churchill said in that speech?' I don't have to dig it up from my memory banks ... I can give them some questions to help them find it for themselves.

The above quote by Mr. Allen provides one example of how the role of teacher as facilitator shapes the use of ICTs. The facilitator, ideally, functions as a guide or a coach rather than someone with "ultimate authority" as he phrased it. The student is pushed to utilise the technology to find his or her own answers. The use of ICTs shapes the role of the facilitator by mediating the teaching and learning process and supporting independent learning. Students and parents are able to keep track of assignments and grades by simply logging into Echo. This provides parents with necessary and timely information about their child's schoolwork and enables many of them (those with internet access and those with adequate language skills) to better support their children.

There were other views on the use of ICTs at Pacific Coast. Ms. Tod, who is Mr. Allen's teaching partner, spoke about the benefits of using Facebook to stay connected with students. She has two Facebook pages. One is specifically for school. It is what she calls a "homogenised version" of her primary Facebook page. She decided to create the page when students decided to use Facebook for study group purposes. There are communication pages in Echo and she posts assignments and messages there. However, she found that students were "always on" Facebook, so they are more likely to see a message from her if she posts it there.

She also talked about the use of blogs as being a more favourable choice for students than simply writing a paragraph. She explains,

I think it's funny that I ask them to write a blog and ask them to write a paragraph. In their brains, they're completely different things. Nobody complained about the blog. Everybody complains about the paragraph. Their blogs are all a paragraph. But it's technology. It's fun. It's pictures. They get to put up funny quotes.

The affordance of the technology, in this instance, is that it provides a more creative way for students to develop a paragraph and also serves as a medium by which students can share what they create with a wider audience.

Ms. James also brought up the aspect of creativity with the use of ICTs. She feels that it provides an avenue for more creativity and efficiency in the classroom. For example, she can locate resources like a particular website and have students access the site immediately. There is also an environmental benefit because she does not have to print out materials for the class. She further appreciates the ability to use ICTs as a collaborative tool, allowing teachers and students to share and edit documents "in real time."

Some teachers feel that students have difficulty determining the credibility of online information and feel they are too dependent on using search terms in Google as their main method for conducting research. Some teachers have addressed this issue by creating a protocol for conducting research and others are trying to impress upon students to use Google Scholar and search peer reviewed journals for information.

Students in the Spanish language class have similar issues related to the reliability of online sources. Ms. Thomas provides an example of this during a lesson about sports when a student googled the word "bat" for the Spanish translation. The

experience provided an 'aha' moment for students when Ms. Thomas couldn't help but laugh at the answer the student had written. She explains,

Well in English bat is also a small animal that flies at night and one of them [students] had googled the word for bat and it came up with the animal's name which is "murciélago" ... When you read it in that language, [Spanish], it says ... he swung the animal. You can imagine how silly it would be and so I had to explain to them, "That's why you have to be careful when you're looking up words. Look at what you just wrote.'

Mr. Allen and Ms. Tod spoke about the benefits of using ICTs but they also report challenges associated with its use. Mr. Allen acknowledges that students will sometimes get distracted but he feels that having the freedom to use the tools, "empowers [students] to make good decisions and to be responsible and to hold others accountable." He talked about situations in his classroom where students hold each other accountable by letting off-task students know they should stop playing online when the teacher is talking. He explains,

That's sort of Teacher 101. The more you can get them to monitor themselves, the more you've won the game because you can't be a cop. That's not what we signed up for.

This idea of students monitoring themselves and each other will be discussed in more detail later in this chapter and also in chapter 7.

Ms. Tod also has challenges with students being distracted. However, she has worked out a compromise with students regarding their need to check their mobile phones. She asks students to put their phones on their desk so they can see who is contacting them and then determine if it is important. If it is important, they can ask to step outside and respond. She explained her reasoning for this compromise:

When there's a certain respect around how you expect them [students] to behave, they behave like adults, frequently better than adults. They tend to behave as long as you're not telling them that they can't do things.

It seems that respect, in this case, involves providing students with options and trusting that they will utilise those options wisely and respect the behavioural norms for the class.

For some students, the lure of being online is just too tempting and it becomes a distraction. One teacher of freshmen students found that she needed to impose a time limit for writing journal entries so students would focus on getting it done and not waste time online. She recounts the story of one student who could no longer be trusted and had to have a teaching assistant, an older student, sit behind her to make sure she was actually working and not wandering on the Net. She will have to earn back the trust of her teachers. Teachers here rely on peer monitoring and influence to help with behavioural issues.

Mr. Hopkins acknowledges the complexities of teaching when students have screens in front of them. He talked about the difficulty of determining when students are distracted and when they are supplementing the information being discussed in class. Mr. Hopkins refers to this affordance of supplementing as "the promise of technology." But he also realises that sometimes students find it difficult to resist other online temptations like music, television shows, YouTube videos and other sites that are unrelated to what they are learning in class. He explains that Pacific Coast students are "plugged in all the time" and he knows that students are sometimes off-task and says acknowledging this is part of how he manages it, along with having conversations with students about their behaviour. He doesn't believe

in telling students “don’t do that.” He prefers to have a conversation and provides an example:

I understand that you’re involved in this thing going on over here. Can we shift over in this direction for a while? And what I’d like you to do is figure out how to manage this task that we’re engaged in right now. And if that means you need to get off your laptop and get on a desktop machine so I can see what you’re working on it, then we should do that. Or if it means I need you to bring your laptop and sit at the table here with me so that we can work together then we need to do that.

In an indirect and very creative way, he is still telling the student “don’t do that.” However, he is also asking the student, in a respectful way, to shift his or her focus. He also provides some possible options to help the student get back on track. Mr. Hopkins does not see this as an absolute solution to the problem of distractions and he makes it clear that solutions depend on the specifics of the individual situation. He admits that he does get frustrated when he is talking and students are looking at screens. But he believes it is important to check with students to determine if they are following what’s going on in class before making assumptions about what they are doing with the technology. This is the same reasoning used by Ms. Thomas when students are talking in her class. Both talking with peers and use of the internet can be sources of distraction or they can function as a way to gain clarity about what is being discussed in class. Regarding the technology, Mr. Hopkins comments that teachers should not be “wrestling” with it and he feels that,

A lot of times [teachers] have this schizophrenia about technology where we say the technology is great. We want to have it in the classroom but we’re really scared what the kids will do with it.

The use of ICTs can sometimes create dilemmas for teachers who see the benefits of their use but must also be alert to the challenges they pose to the teaching and learning experience. This can be especially challenging in a one-to-one

computing environment where students are, as Mr. Hopkins put it, “always plugged in.”

Many of the challenges involving technology identified by teachers are related to students being distracted by the internet or texts on their mobile phones. During my observations at Pacific Coast, I did notice some occasional internet surfing by students, but not much. Discontinuing the use of ICTs is not an option and teachers have devised methods that allow these tools to be fully utilised. The fact that students monitor the behaviour of their peers is also beneficial in minimising the problem of distraction.

Certainly, the use of ICTs can be a major distraction for students. However, the fact that this did not seem to be a major issue for students is due to the internalisation of school norms and values. This is aided by the influence of peers. Earlier in this chapter, I discussed the processes of socialisation and enculturation for teachers. I now turn to the teacher’s role in these processes for students.

5.5 Teacher Roles in the Process of Enculturation for Students

Teachers of first year students play a significant role in their enculturation into the New Tech model. They prepare students to work in a collaborative PBL environment and this is a vital step, as some of the students may have had limited to no experience working in groups. Learning to work and support each other in groups is a salient cultural aspect of life at Pacific Coast. Teachers of first year students spoke with me about how they prepare students for their first group project.

The first project for freshmen students is explicitly about culture and culture-building. Ms. Stevens and Ms. Johnson explain that throughout this project they

work with students to help them to recognise their own learning style as well as their strengths and weaknesses. In order to help students learn to work together, they teach them to “respect one another’s strengths” and to understand how an individual’s particular strengths can benefit the group. They focus on the variety of skills needed to successfully complete a group project and they teach students that “you need that creative person, that critical thinker, that person who is organised.” Ms. Stevens helps students to understand how their strengths and weaknesses “balance one another as a learning community.” I revisit the idea of a learning community in chapter 7. Understanding that conflicts are inevitable, teachers address how to handle conflict in a group. For example, Ms. Stevens explains how she and Ms. Johnson incorporate:

reading about empathy and questioning and finding out why somebody is not doing their work before you get angry that they’re not and to try and problem-solve around some of those things.

Students can fire group members who are not doing their work. However, this is not allowed during the first semester. Teachers want them to practice working together and resolving conflicts. Students learn how to create a group contract that specifies the responsibility for each group member. The contract must also detail the process for firing a group member, which the students can do, during the last project in their freshmen year. Ms. Johnson commented that, “Teaching the kids the group process really teaches the kids about the school culture.” This is one area where the ideal New Tech values of trust, respect, and responsibility come into play. The process of teaching students how to work successfully in groups encompasses these values. The goal is for students to learn to trust each other to be responsible for contributing to the group effort and respect each other by following through with their work and assisting group members when needed. Being

responsible also includes working to get a group member back on track if they have strayed. This should be done respectfully, keeping in mind that person's strengths and weaknesses and working with them to figure out solutions to problems they may be facing.

Teachers play a significant role in the enculturation process for students. However, peers also play a major role in the process. Ms. Stevens explains that for two years the school experimented with keeping freshmen students isolated from the upperclassmen and just having the teachers work with them on school culture. This plan was not successful and currently freshmen are blended with upperclassmen in advisory sessions and upperclassmen (junior and senior students) serve as mentors for the younger (freshmen and sophomore) students. Ms. Stevens explains,

I feel like the burden is off me and they're learning from their peers how to behave, how to collaborate, and how to really become a trusted member of our community. They're experiencing it because they're mingling with kids who get it.

I ask her if there are things that the freshmen observe from the upperclassmen or things that are spoken. She replies,

Oh, they get schooled. I love it when it comes from the upperclassmen. They come in at the beginning of the year and tell them exactly what it means to dress appropriately or express affection to a loved one professionally. If you listen carefully, you'll hear upperclassmen very explicitly passing along the legacy of how we behave here and how we treat one another.

Another teacher described two methods used by students to positively influence the behaviour of peers:

They [students] don't give attention to the people who are not behaving ... like students who ... come in as juniors and seniors and they're used to being a certain way in class and right away they'll just get, 'Oh, we don't do that here.' It's funny to watch because the students will say that. I don't have to say that.

This is a scenario that was repeated by many of the teachers I interviewed. Ms. Thomas told me about one of her class sessions where some students were being disruptive while she was talking. She was about to intervene and ask students to settle down when an 11th grade student handled the situation, saying, “Shhh! Guys she’s talking. Come on.” Ms. Thomas feels that a correction coming from a peer is different than if it comes from a teacher. She explains, “I think they kind of realise that ... everyone else is paying attention and they expect me to pay attention too.”

This student-self monitoring extends to behaviours outside of the classroom as well. Ms. Thomas talked about students also guiding each other on matters of how to properly dispose of their waste, even letting students know when they could have recycled an item instead of throwing it in the trash or even “not spitting gum in the water fountain.” She reiterates that it is the students who are monitoring and influencing each other. She believes part of the reason they do this is because they are,

proud to go to the school and [have] taken ownership and a stake in what the school culture is and so because [students] care about it, [students are] going to tell [their peers] don’t disrespect it and don’t misbehave in a way that would make us uncomfortable.

Misbehaviours can have consequences for the entire school. For example, one of the first things I noticed when I arrived at the school is that there are no lockers and when students are gathered in the Hub, they leave their backpacks unattended on the tops of tables and against walls. No one seemed to be concerned about having his or her bags stolen. I asked about this during my visit and was told that thefts are a rare occurrence. However, a few teachers told me that about two years ago, there was a problem with theft and other inappropriate student

behaviour. The principal responded by putting the school on what teachers and students refer to as “lockdown.” Mr. Richards describes the situation.

We said you [students] cannot leave class without a pass anymore. We’re going to be traditional for a week and so it was kind of a way to shock the students into recognising that this is what happens at other schools. We wanted them to appreciate what they had and to be aware that in order to keep doing what we’re doing, we need to watch out for each other.

Ms. Tod describes the weeklong “lockdown.”

[The students] were so incensed at this right being taken away. You know they felt that it [open classrooms] was so much a part of their culture and that they were trusted and it was open and so then that led to another big dialogue about what have you done for us to trust you? And it’s great because once the dialogue has started we [teachers] kind of get to take our hands off of it. They’ll [students] start taking care of it among themselves. You’ll see a lot of seniors going up and talking to sophomores [2nd year high school students] and freshmen [1st year high school students] and saying, ‘Listen. This is not what we do here.’ And so we don’t have to play the heavy because it is their peers who will do that for us.

Several teachers talked about the upperclassmen guiding the younger students and I observed instances of not only upperclassmen intervening to correct younger students but also students within the same year group trying to influence the behaviour of their peers, specifically trying to get an off-task group member back on track. This is discussed in more detail in section 5.6 of this chapter.

Ms. James credits the group work and team building activities for students’ willingness to get involved with behavioural issues.

Having them in groups and really relying on each other to get each other’s work done helps with that ... All the trust, respect, responsibility we hold with them, they start holding with each other. So it’s just all part of that culture and community building.

These discussions of the peer-to-peer monitoring system illuminate the teachers’ perspectives on the important role of peers in the enculturation process for students. It also highlights how the New Tech values of trust, respect, responsibility

and professionalism are manifested in the actions of students at Pacific Coast. These actions work to ensure that trust from staff members remains intact and that what students perceive as their rights and freedoms (i.e. open campus, high degree of independence, input on school activities and policies) continue uninterrupted. In terms of schoolwork, it is in everyone's best interest to ensure that all group members are on task and successful.

The following section presents student narratives and my observations of students' experiences at Pacific Coast High School. I examine students' feelings about their school and their successes and challenges. I discuss additional aspects of the process of enculturation into the New Tech model and shed light on how New Tech cultural values are manifested and maintained at Pacific Coast. Students' use of ICTs as a tool for collaboration is also discussed. Student experiences in this area provide insight into how certain cultural values within the school support and shape the use of ICTs. Lastly, a prominent theme that emerged from student interview data was the uniqueness of Pacific Coast High School in relation to more traditional high schools. Therefore, this section also examines student narratives about the unique character of the school and its students.

5.6 Student Experiences

Being a student at Pacific Coast New Tech

The majority of students I interviewed, eight of the ten, expressed mostly positive feelings about their school experiences. However, two students were particularly critical about their experiences. In 2013 a survey was conducted by the New Tech Network to assess five elements of school culture within its network of schools. One of the survey probes was designed to determine if students felt that their school experience was positive. At Pacific Coast New Tech, 87% of students

(310 out of 356) responded. 12% strongly disagreed that their school experience was positive; 4% disagreed; 14% neither agreed nor disagreed; 38% agreed; and 32% strongly agreed. In summary, 70%, the majority of respondents, rated their school experience as positive. These figures are quite close to my own findings based on interviews, informal conversations and observations. It indicates that most students are satisfied with the choice they made, or the choice their parents made for them, to attend the school. Conversely, there are students who do not want to attend the school but are essentially pushed into attending by their parents and there are those who willingly attend but find that the school is not the right place for them. These students sometimes leave to attend other schools. Additionally, some students reach their senior year but lack some of the requirements needed to graduate from Pacific Coast. They are required to leave and attend another school with standard graduation requirements.

I spoke with students from all four year groups about their experiences at Pacific Coast High. My goal was to understand more about the culture of the school from their perspective. Several students actually used the term “culture” in their narratives and it was important for me to understand what they meant when they used it.

Sarah is a vibrant, articulate 4th year student who is planning a career in theatre arts. She describes the people at the school as “creative” and tells me that many actors, artists, and musicians as well as people who are passionate about computers attend the school. Sarah provides her view on what the school offers:

I think because they're [students are] allowed to be on their own so much, like they have their own responsibility [and] it allows them to take what they're passionate about and pursue it because it gives them that self-discipline. Because the projects are so open ended most of the time, you see so much creative stuff come out ... And I

think that's something really unique about this school that I don't think I would get somewhere else.

In the quote above, Sarah talks about students' responsibility for taking projects and infusing them with creativity. Teachers provide guidelines for projects but students take those guidelines and create projects that are unique. Sarah feels that the facilitative teaching approach, which allows students more freedom and independence, helps students to develop self-discipline. Students in this school will not fare well if they do not develop self-discipline. This is vital here as students are not just accountable for themselves but also to each other. Projects are conducted in groups and the work or non-work of one group member impacts the other members. A more detailed discussion of group work and the related successes and challenges follows later in this chapter.

Sarah continues with her views on the culture at Pacific Coast:

I really enjoyed my experience here and the culture in the school is just so much better... I visited [anonymous school] and [anonymous school] [in the district] and the culture here is just really different. We have a lot of responsibility here and we are allowed to be on our own a lot and there [are] a lot of rules that we don't have here ... Everyone here is just generally more nice and there's not really a bullying problem here. I mean there [are] a few things here and there but it's not as big as other schools and so the culture here is really different. It's a lot more accepting.

The New Tech core values of trust, respect and responsibility are apparent in Sarah's narrative. Students have an incredible amount of responsibility at the school. Older students mentor the younger students, monitor the behaviour of their peers, and ensure that their own work as well as other group members' work is ready on the appointed project due date. Some students also serve as student government officials and work with administrators and teachers regarding certain school-wide decisions. As discussed earlier in this chapter, students are required to

complete a certain number of community service hours, complete an internship, and take a specified number of college classes, as well as create a senior year portfolio in order to graduate from Pacific Coast. Time management is essential for students.

Sarah talks about there not being a lot of rules at the school and this is one way that the value of trust is made manifest. Students are accustomed to freedoms and privileges (i.e. open campus, high degree of independence, input on school activities and policies) that are usually not the norm in most traditional high schools. She also describes the culture of New Tech as being more accepting and the school not having a problem with bullying. This illustrates one way in which the value of respect is enacted.

Results of the same school-wide survey mentioned earlier in this section indicate that nearly 79% of the 341 students who responded report that they feel accepted for who they are at the school. 74% report that they feel accepted for who they are in the school in their experiences with other students. These results are significant as bullying has been a major concern for many schools with reports of students having committed suicide as a result of bullying.¹⁴ Bullying is also a major factor in school shootings as discussed in Klein's (2013) *The Bully Society and the Crisis of Bullying in America's Schools*. One of the things that surprised me when speaking with students informally was that a number of them said that one of the reasons they decided to attend Pacific Coast was because they knew they would not be bullied and they felt that it would be a safe environment. Students here report that prior to their enrolment at the school, Pacific Coast students made recruitment

¹⁴ See the following USA Today article: <http://www.usatoday.com/story/news/nation/2013/10/15/florida-bullying-arrest-lakeland-suicide/2986079/>. See also <http://www.fox5ny.com/news/191317127-story>

visits to their middle school and indicated that the school had a safe environment and that bullying was not a major problem.

I was aware of only one incident at the school involving online bullying. Susan, a 2nd year student described an issue involving groups of girls upset over not having enough space in the gym for their activities because another group was using the space. She explained that this created a “whole drama” and resulted in bullying comments from both sides being posted on Facebook. The issue has been resolved with apologies given by both sides. Susan felt bad for her role in the situation and has since been involved in an anti-bullying campaign. Her goal is to speak to younger students about bullying and she created an awareness video on the topic. She explains the motivation for her work.

I created that video because I felt that what I did hurt someone and I felt bad for myself and for that person and I wanted to recover from that and I wanted the other person to recover from that too I just want to let people know that it's wrong and it actually does impact people's lives.

Susan also told me that she sees cyber bullying happening “all the time” on Facebook with friends who attend other schools. Pacific Coast is not immune from bullying. However, Susan and the other students I spoke with said that it does not happen often. It is likely that the close relationships that students develop with their peers, internalised values, and strategies they learn for dealing with conflict minimise bullying at the school.

Despite the cyber bullying incident, Susan had very positive things to say about her school experience:

Everyone's like a little family and everybody treats each other equally and if there's a conflict, we all know how to resolve it.

I was curious to know more about how students learn to resolve conflict in an environment where group work is so prevalent. Susan explains,

I learned it from working in groups with different people ... We all know now what their strengths and what their weaknesses are. So when we have a problem, we know exactly what to say to solve it or what to do. And if it can't be solved, we have learned to talk to the teachers about it and get their perspective on it too.

Strengths and weaknesses of group members are revealed when the group completes the mandatory project contract. This is not a perfect process and there are times when responsibilities need to be renegotiated, for example, if someone is having problems with the aspect of the project for which they are responsible. Students get plenty of practice with conflict resolution as they create projects and work in groups extensively at Pacific Coast.

When I asked Susan about her teachers, she described them as “cool” and explained,

They don't guide you step by step, which I think is really important because in the real world your boss isn't going to be like constantly with you holding your hand and telling you this is how you need to get your work done. So I think that it's good to have teachers that aren't constantly checking in with you and making sure that you're on task because in the real world that's not what is happening.

Susan views this style of teaching as beneficial for the world of work. In many cases, it is the students themselves who check in on each other to ensure that the work is progressing and the teachers provide guidance when there are problems.

Faith is a friendly, soft-spoken 4th year student. She is the student who was working as a teaching assistant in the combined English/Drama class. She initially did not want to attend the school but her mother insisted that she attend because she wanted her to get a good education. It took Faith a while to adjust to being at the school and she struggled in the beginning to develop relationships. She

described herself as being “defensive” with a “brick wall in front of me.” She told me that she decided to be more open to change after a conversation with the assistant principal who asked her if she wanted to be successful in high school and then go on to college. When she replied “yes,” he responded by saying, “then you need to cut the attitude.” She is now happy about the decision her mother made for her. At the time of the interview she was on track to graduate and awaiting the arrival of college acceptance letters. Faith spoke with me about her views on the school’s culture:

I know it’s not very diverse colour-wise, but it’s for the most part a very good culture. The students are very respectful to one another. You rarely see disagreements or fights happening here. And I think that’s really important in high school because you know at our age we can be very rebellious or very rambunctious ... Just getting that divine culture where everybody’s getting along and not separated ... I think that’s like one of the more important things.

Other students also talked about how well students get along and don’t separate themselves. Ricky, an energetic 2nd year student and an aspiring actor, discussed his experience in middle school where there were numerous cliques. He told me that there were no cliques at Pacific Coast. He explains,

Most people here aren’t like that. Everybody’s your friend. I like that because it makes me feel more at home.

He also distinguishes New Tech teachers from what he calls “normal” teachers.

I like New Tech teachers ... They treat you with more respect than normal teachers. I have a D+ in one class and the teacher herself told me ... ‘you’re not allowed after school to play videogames, do sports, nothing until you give me a C.’ Now she has kids following me making sure I don’t do that. So I got to get a C or a B or higher and I actually like that. No teacher does that. Normal high school teachers are like, ‘Screw you. Go home.’

His account of a “normal” teacher’s reaction may seem a bit exaggerated but he appreciates the lengths to which New Tech teachers go, calling upon the peer-to-peer support network to help students achieve success.

He goes on to describe the teaching style of some of his teachers and conveys a story about his first year at the school. One of the teachers told the class that teachers are like water fountains:

When you turn us on, we’re not going to spray water. We’re not just going to throw a bunch of water on you. We’ll do it drop by drop. Giving you drops of information. Each drop is a little bit of information and you have to get all the information and figure it out yourself ... That’s something else I like about New Tech. They show us how to teach ourselves instead of them teaching us.

He is referring to the facilitative style of teaching and his perception is that he is not being taught. However, I found that teachers do incorporate direct teaching strategies when they feel it is needed. As discussed in chapter 2, facilitation is a form of teaching that allows more space for exploration and encourages students to become independent learners, utilising available resources (online and other) to solve problems and complete projects.

I spoke with some 1st year students about their experiences at the school. Annie is a vibrant student who has Attention Deficit Disorder (ADD) and she experiences some learning challenges as a result. She discussed her thoughts on the culture at Pacific Coast, emphasising that people are treated equally, a sentiment voiced by several other students. She goes on to explain,

That’s like one [element of] the culture ... we’re comfortable with each other ... I mean at other schools there’s probably like a lot of fights and stuff and we’ve probably seen one fight here and really this year there haven’t been any, so I’m really shocked because where I came from there were a lot of fights.

She is expressing comfort in terms of relationships with other students. The infrequency of fights seems to indicate, as some students spoke about, a level of acceptance and a learned ability to work through differences that might otherwise result in serious conflicts.

Annie also appreciates the level of freedom she experiences at the school, being able to go off campus for lunch and having access to the school building prior to the official start of the school day. At her middle school, students were required to wait outside of the building until the official start time. These freedoms contribute to the school feeling more like a college campus or corporate work environment. These freedoms are also the result of a level of trust and respect for students and, in turn, students are expected to be responsible by attending on time and behaving appropriately in the school.

Lynn is an assertive 3rd year student who is one of a small group of students at the school who attend the same church. This group travels approximately half an hour by car to attend Pacific Coast. Lynn wanted to attend the school to be with family members who also attend. She told me that she feels safe at the school and doesn't have to worry about people stealing her things. Certainly, the safety issue, as it relates to the non-occurrence of theft, coincides with the New Tech espoused values of trust and respect. Lynn had more to say about the school, providing a more critical view regarding one aspect of the school's culture.

Well I'm sure you've heard being around this school a lot that there's trust, respect, responsibility and professionalism. I believe that is the culture. But I believe that, if I can be honest, I feel that sometimes the culture is that we want that to be our culture but that's not how it is. In all reality, it's still a normal high school. You know, not everyone is professional. There are respecters of persons and I believe that kind of degrades your professionalism if there's a respecter of persons.

Lynn feels that trust, respect, responsibility and professionalism are the espoused ideal values of Pacific Coast but that the school falls short in some areas. By “respecters of persons,” Lynn is making a biblical reference which she uses to describe the class president, who is one of the students responsible for ensuring that behavioural norms, like the dress code in this case, are adhered to. Lynn feels that there are inconsistencies when it comes to confronting peers who are not dressed appropriately (e.g. the class president not confronting her friends who may be inappropriately dressed). When this is the case, Lynn argues that it degrades one’s professionalism.

In the narrative above, Lynn refers to Pacific Coast as a “normal” high school. But this will need some unpacking, as she also distinguishes Pacific Coast from a “normal” high school.

It’s a little different because I know how other high schools are normal high schools ... To be at such a small school - I graduated 8th grade with a class of 500 people, so to be in a high school [Pacific Coast] with 400 people is kind of like a culture shock.

I asked her if there were other things besides the small size that distinguished Pacific Coast from “normal” high schools and she mentioned that you don’t see people at other schools walking around with laptops and that being able to leave your belongings around without worrying about theft makes it feel safer than other high schools. But even so, she feels that in some ways it is a “normal” high school. She explains,

There’s still that kind of feeling like it’s still a high school. There are still people who are sneaky and you’ve got to watch out for people ... Any place – business, work, any high school or middle school, you always have drama ... You just have to watch out for the people who you don’t really trust because they will try to sabotage you in any kind of situation and that’s at any given place so you just have to watch out for them and there’s not too many people here who are like that.

According to Lynn, although there are differences, Pacific Coast still has some of the struggles and challenges of a “normal” high school and students still struggle with some of the same issues as those in other high schools, although with far less frequency.

The narratives discussed above showcase some of the feelings students have about Pacific Coast. As I spent time in the school speaking with students and observing classes, there was an overall sense of positivity. Pacific Coast seemed to be the ideal school for the majority of its students. However, for some, it was not a good fit. This is not surprising as “one size fits all” is not a phrase that can be used to accurately describe any education model. As in any school, there are challenges as well as successes and the following section examines the particular successes and challenges of students at Pacific Coast High School.

Student successes and challenges

Group work

In conversations about the successes and challenges of being a student at Pacific Coast, students talked about issues regarding working in groups, online collaboration, and technology as a productive tool and as a distraction. One student even spoke with me about why Pacific Coast is not the ideal school for him.

One challenge that is often new to 1st year students is working on projects in groups and directly dealing with students who are off-task or not completing their share of the work. Julie, a 1st year student, talked about how she has learned to deal with students in her group who are off-task. She explains, “We just confront them and [say], ‘We’re working as a group right now, so that can wait.’ That’s pretty much all it needs.” I ask her if she thinks this comes naturally or is easy for students in the beginning and she continues,

I think it was something that we had to learn how to do because at first you don't want to go up to someone and be like, 'You can't be on your computer doing this.' It's like you have to trust each other [and trust] that someone you're talking to isn't going to get offended by you telling them that what they're doing is wrong.

Julie has provided another example of how the New Tech value of trust manifests itself in the context of group work. I probe a bit deeper and ask more about the process, specifically if it is something she has been taught to do. She replies,

It just happens because when you're in a group with someone and they're not on task, you get affected by it and so it comes to a point where it's like I need to step up and tell them that what they're doing isn't productive because your grade also depends on it.

If one group member is not working to complete his or her component of a project, the other group members must complete it so that it does not negatively affect the group grade. There are procedures for remediation of group members if they are not cooperating. If remediation is not successful, firing the group member is the last resort.

It appears to Julie that learning to deal with students who are off-task is something that is happening naturally. However, as has been discussed, 1st year students go through an enculturation process, part of which involves teachers preparing them and teaching them how to work in groups and resolve conflicts. Students who have attended Pacific Coast for a longer period of time have much more experience working in groups and provide a more nuanced view of the complexities of working in groups.

Sarah, the 4th year student with a strong interest in theatre, talked about how she has grown since attending New Tech.

I came in as a Freshman. I didn't have very good people skills and it was really hard for me to be motivated on my own and after four years here I learned to work with people better. I've learned to manage my time better ... just solve a problem better.

Sarah credits the extensive project and group work with helping her learn to work with people and manage her time. However, group work can also be challenging. She talked about the complexities of working so closely with others. She explained that one student in her group, for a particular project, would get his work completed at the last minute or start studying his notes the day before a presentation. This made her nervous but she knew he would get the work done. She also gave an example of what happened when someone didn't pull their weight in a group.

You get someone who you know doesn't really do their work and so you kind of have to pull their weight ... I can remember I had to do a lot of someone else's work because they just wouldn't do it. You can give them feedback. You can tell the teacher, 'hey this is what happened at the end of the project.' So there [are] always solutions for it.

When asked if she had ever fired anyone from a group, she replied "no," saying she just doesn't like to fire people and would rather figure out a way to get the person to do their work. She gives an example of one occasion where she refused to fire a student:

I remember my sophomore year and I was in a group and the group was like, 'Fire her. We have to fire her. She's not doing her stuff. Do it.' I'm like 'No. No. We can find a way not to fire people. Plus it would be so hard for her to do that project on her own.' I sympathised for her and so I talked to her and we worked things out and eventually we got her working. And it was someone who doesn't usually do their stuff. And so I don't like firing people. I just personally don't like it. But I know my friends have fired a lot of people.

When a student is fired from a group, that person is then responsible for completing a project alone, which can be a daunting task. Sarah's firm resolve to work with this student demonstrates compassion as well as a deep level of internalisation of New Tech beliefs and values around responsibility and teamwork. She took on the responsibility for working out a way to help this group member

complete her work. In a traditional school environment, this is usually the responsibility of the teacher. At Pacific Coast, the norm is to have students take on this responsibility and teachers intervene only when absolutely necessary.

Lynn seems more frustrated by the group process than Sarah. She refers to group work as “challenging,” stating,

I haven't been with too many groups that ... pull their weight equally. There's usually a group leader and usually the group leader pulls the most weight in the group. And there are one or two other people who pull their own weight and there are a couple of people who slack off and don't do anything and sometimes you're not allowed to fire them from the group. But it makes it hard because you know it's extra work that you're doing for someone else and if they get a bad grade, so do you.

How students are graded is not quite as simple as Lynn describes here, so I probe a bit deeper for additional information asking her how she deals with those kinds of situations and she explains,

Many times I will talk to the teachers and I'll tell them they're not pulling their weight. A couple of times they won't show up for presentations and I just won't put their name on the project because they didn't do anything. So unfortunately for them, they have to live with their consequences.

So even in cases where a student is not doing their work and is not fired from the group, they will not receive credit for work they did not do. However, this puts more pressure on the other group members because they have to step in and complete the missing portion of the project.

Faith's perspective on group work is that it,

can be either a problem or it can be an advantage because you do have those kids who feel like, 'Oh I have all these people in my group who are of a certain knowledge or intelligence that's higher than mine so I can get to slack off.' That's how they feel sometimes but with that case, you do have the ability to fire a group member as if you were in the corporate world where you'd be like, 'You're not picking up your part, you're fired.'

There certainly could be several reasons that students “slack-off.” One, as Faith suggests, is that students feel as if they do not have to work hard because there are others in the group who they believe will do most of the work because they are perceived as smart and hard working. However, “slacking-off” could also indicate that students feel insecure because they do not perceive of themselves as smart. Teachers of 1st year students work hard to alleviate this by helping students learn to appreciate each other’s talents, collaborate, and help each other.

Learning to work in a group can be extremely frustrating and I observed a situation involving a 1st year student, Tara, who felt there was a problem with work ethic among her group members and she was quite upset about it. Teacher intervention was needed and Ms. Stevens, the teacher, began the process.

Ms. Stevens calls the group together and in a very calming voice begins to compliment each one of them on their individual talents. She then tells them that sometimes people with different talents don’t always work well together. She gives an example of her own experience working with her teaching partner in their first year together, stating that she is a “heady writer” and her partner, the Drama teacher, is a “drama person.” She lets the students know that it took them a whole year to appreciate each other’s talents.

She then asks the students to think about what they appreciate about each other and to share those thoughts with each other. She begins the process by sharing what she appreciates about one of the students. Each student then shares what he or she appreciates about one of the group members. Ms. Stevens tells the group that she appreciates how Tara has worked on the script for their upcoming puppet show. She then mentions one by one the challenges for each student in the group. For example, one student is having trouble creating the voice for her puppet.

She then asks students what they need in order to get back on track with the project. One student conveys that he needs more props and the others chime in with their needs.

Lastly, Ms. Stevens asks if anyone in the group wants to make amends and if they know what that means. It seems they all understand and one student responds by apologising for not putting his full effort into the project. She then asks if he could work on the task list for the project and tells him that part of making amends is also making a plan of action to move forward. Another student says he will stop making comments in between lines when the group is rehearsing. He is referring to his funny but annoying comments made when the group is rehearsing their script. Ms. Stevens asks a female student in the group if she would be willing to keep him on track. But he chimes in saying he thinks he will be okay. However, Ms. Stevens knows better and again asks the female student to help him stay on track and she agrees. This is again another example of the peer-to-peer monitoring of behaviour, an important aspect of the school culture that teachers fully appreciate.

It was a very moving experience to watch Ms. Stevens skilfully work with students to help them move forward as a group. It was done with such care and compassion and it was obvious that she was very familiar with the strengths and weaknesses of each student. I spoke briefly with her after the session and she explained that Tara, the student who made the complaint, has a type-A personality and is an A student. However, the other students in the group are not as high performing and she knows that Tara is still not happy. During the meeting with the group, Tara was the only one who didn't make eye contact with group members and it was difficult for her to voice a word of appreciation for any of them. This is understandable given that she was quite angry about the situation. After a few days,

I asked her how the group work was going. She gave a bit of a smile and replied, “better” but did not go into any more detail. Adjusting to group work can be extremely difficult, particularly for 1st year students who are just beginning to learn strategies for collaboration and conflict resolution. They are also in the early stages of learning what it means to be responsible to group members.

ICT use

There are also successes and challenges related to the extensive use of ICTs. Pacific Coast ensures that all students have access to a computer or laptop. Most students bring their own laptops. However, if they do not have one, there are desktop computers in classrooms. They are able to lease a laptop from the school, which they can take home, for \$8.00 per month or \$80.00 per year. In a discussion with the principal, she said that even “very, very, very poor” families save their money and purchase their own laptop. Her estimate was that there were approximately 80 school laptops currently being rented by students. Unfortunately, there was no data to indicate what percentage of the students at the school have internet access at home.

All students and staff make use of Echo. It is used to access daily agendas for all of their classes and the details for each project, as well as corresponding readings, additional supporting materials, and assignments. ICTs are used extensively by students to communicate and collaborate on projects with classmates. I spoke with students about their usage to gain a better understanding of their experiences.

Sarah shared that the prominent tool students use to collaborate is Google Docs, which allows students to share what they have done and comment and edit

the work of others. Students also communicate through Echo, Skype and Facebook.

Sarah explained that 4th year students have their own Facebook group and she shared some examples of how students use it.

For example, like someone has a question like, 'Oh, do we have a test tomorrow?' or 'Oh I wasn't here. What happened?' 'I don't understand that assignment. Can someone help me?' Or 'Hey I didn't get to read that chapter last night. Can someone help me understand it a bit?' Or 'Oh I tried reading the book and I don't understand the ending.' So it's kind of like collective knowledge and so it's nice and since we're seniors sometimes people will advertise on it like oh you know, 'buy your prom tickets.' So it's kind of nice.

In this instance, Facebook is used both as a tool to help and support peers academically and as a tool for advertising events. Sarah refers to these online group exchanges as "collective knowledge." Indeed, one of the affordances of Facebook for this group is in the features that allow them to self-organise and engage in knowledge sharing, helping peers to better understand readings or other assignments. I asked if teachers are ever present in the group. She explained that the Facebook groups are only for students and that sometimes students complain about assignments. According to interviews and informal conversations with students, it seems that Facebook also serves as a platform for some to let off steam.

Sarah also discussed the benefits of Skype, which she uses in her theatre work.

Sometimes ... one of my actresses is really busy and so ... we just Skype her in like the one scene she's in and she reads it through and she can see the reaction of the person she has to act off of and he can too, so it's nice and they get to work by seeing each other's facial reactions. That's a big part of it too and so she doesn't miss out on any time just 'cause she's busy. I like Skype a lot for this school.

As Sarah points out, students here are extremely busy. Some are taking evening college classes and others may be working on internships. However, the use of digital tools provides students with a way to stay connected and work together.

At Pacific Coast, being absent is no excuse for not being prepared. It is the responsibility of the students to figure out how to use the technology to ensure everyone in the group is up to date and prepared. As discussed earlier in this chapter, it was not unusual to hear students talking about emailing, texting, skypeing, or calling a group member who was absent to get their input on a project or catch them up on the status of a project.

I asked Faith about the use of Facebook for schoolwork. She explained,

Facebook has been very helpful to some of the students here. For some projects in the previous years in school, we would go on Facebook and create groups for all the members of that project. We would message each other on there. We would send each other 'Hey I just finished this. Now I'm going to do this.' And everybody in that group could see it, so that way ... we're on the same track. That actually can be a benefit.

I wanted to know why Facebook was chosen and if there were any challenges when using it. Faith explains,

Well you know Facebook is very popular especially with teenagers now days and being in high school you see a lot of teenagers, they kind of use Facebook socially and so they were, like, why not try to use it for education? So we decided to give it a try and there was some success and then sometimes there wasn't. But for the most part, it was a very big success.

Facebook is widely utilised for non-education related social purposes. However, students here, recognising its affordances, took the initiative and utilised it as an educational tool for communication, sharing, and collaboration.

Faith further explained that many students are using Facebook and checking it regularly, so some of her groups experienced more success setting a time to meet in the Facebook group room. Similarly, as described in section 5.4, Ms. Tod also realised that students were always on Facebook, so she used it to remind students of

assignments and to answer their questions. Faith found that using Facebook eliminated the excuse of some students saying they didn't know about the meeting.

Lynn also describes collaborative efforts using ICTs:

Planning is not always easy. Sometimes it's hard so we won't be able to get on at the same time. Most of the students have cell phones so we'll just text each other and say, 'Hey, can you get on the Google Doc?' Sometimes we won't get on the Google Doc, we'll get on Skype or Oovoo or some kind of thing like that and we'll just say, 'Hey, this is what I have, do you like it? Do you want me to change anything?'

These examples show that collaborative group work does not end when the school day ends. The use of ICTs is integral to the learning experience at the school. The affordances of ICTs make it possible for teachers to act as facilitators and encourage students to be independent but also collaborative learners using the technology to locate information for themselves and to collaborate with classmates during and also after school hours.

The narratives above provide examples of how the collaborative school culture shapes the use of ICTs at Pacific Coast. They also illustrate how students, independent of their teachers, devise ways to communicate, collaborate and share knowledge using particular ICTs chosen for the affordances they offer to support the needs of the group. This is an aspect of the education process at Pacific Coast that contrasts strongly with more traditional education models.

Students also face ICT-related challenges. For example, Annie purchased a laptop from Best Buy, a big-box computer store, when she began attending Pacific Coast. She had problems with the laptop breaking and explains,

[My laptop] broke so I had to have a school one that they lent me for like \$8 ... It was a while until I got my laptop back because Best Buy was fixing it so I was like, 'Where is my laptop?' And so they gave it back and the problem occurred again." Now I have it [my laptop] again and there's nothing wrong now that Mr. Miles fixed it.

Annie had lots of problems getting her computer fixed at the store where it was purchased. She finally took it to Mr. Miles, who works at the school and handles the network engineering, network administration and desktop support. He fixes any problems that students have with their laptops and he told me that some of the major issues he sees with student laptops are viruses, loading bad software and some hard drive problems. The students are fortunate to have someone onsite who repairs their personal laptops free of charge. I view this as a necessity for a school that relies heavily on ICTs to support the education process. Home internet access is also a necessity. However, as mentioned earlier, the school does not have data to indicate how many students have this access. I discuss this further in chapter 7, section 7.5.

In a discussion about students being off-task, Mark, a very friendly and extremely talkative 3rd year student, shared that he is addicted to gaming and that this, in previous years, has affected his schoolwork. According to some of Mark's teachers, he continues to have issues with self-control. Mark explains,

[Gaming] was definitely a distraction. [It] was the hard part to face ... that I had to ... keep myself away from gaming. I was really into gaming with my friends because a lot of my friends ...had the same problem and they were wanting to game with me at school so basically we just had to not.

He also talked to me about the benefits and challenges of using Skype for schoolwork.

After school 7:00 [p.m.], ... we'd all open our chat. There was one time when I was having some trouble with an essay and I called my friend on my phone [saying] 'Please get on Skype. I need some help.' He just got on Skype and we worked until about 10:30. From 7:00 to 10:30 I got everything I needed done for the project and he wasn't even in my group. It was just really easy. It was just fun ... We even stayed on a little bit longer which probably wasn't a good thing but it was fun. There's a perfect example. Even Skype can be distracting. Even though

there's no actual distracting things on it, it's still fun to just talk and whatever.

Having had a few conversations myself with Mark, who loves to talk, leaves me wondering how much of that 7:00 p.m. to 10:30 p.m. Skype session was actually spent working on his project and how much of it was spent socialising. He also talked about using Skype to do a screen share with another student at home. He mentioned that sometimes there are things you cannot share in Google Docs or you have a file that has not been exported yet and you just want to share what it looks like.

Students use Google Docs extensively. For example, in the American Studies class, I observed students as they were instructed to provide a written response to three prompts about World War II. The students accessed these prompts in Echo. At one table I noticed a couple of students reading silently. Their laptops were open and they were not typing themselves but sentences seemed to magically appear on their laptop screens. I asked one of the students to explain what was happening. She told me that her group was sharing notes and everyone in the group was contributing. This sharing effort, using Google Docs, will help the group as they plan their projects.

The examples described here further illustrate how students use a variety of digital tools for sharing and collaboration. However, as in the case of Mark, some tools can be both a benefit as well as a distraction.

It is hard to believe that a student attending this school would prefer to avoid using technology. But this is the case for James, a 1st year student planning to leave Pacific Coast. He is not a fan of Google Docs or chat sessions or any online collaboration process. He explains,

I try and avoid those at all cost just because of my style of learning and the way I work. If I'm forced to work with people, I would prefer, 'Hey, come over to my house at 3:15 after school and we can all work on this.' And so I try and do that as much as possible and avoid technology when communicating.

He goes on to explain why using technology to communicate is difficult for him and why he would prefer to communicate in person.

There's a missing human element like when I'm talking to someone like you or anyone else in the world. I pay attention to facial expressions and body language to try and portray myself better – to make myself more appealing when I'm talking as well as make myself more understood. So on text you can put, 'what does that mean?' But when I'm talking I can look and see where I lost you in the conversation. And so if I'm just talking and talking and talking and talking, I may finish a paragraph and you say, 'Well, what do you mean?' and I'm like, 'what part of that did you not understand?' Then that takes another hour to explain something that would have taken a couple of minutes in person.

Using technology to communicate is not the only challenge for James. While observing in the English/Drama class, I notice that he seems to have difficulty working in groups. In this particular class session, students are seated in groups at stations. They are participating in a scaffolding activity that involves group rotations for various activities to prepare them to read *Of Mice and Men*. I observe James' group at station 4, which is equipped with computers. Their question is, "Who is John Steinbeck?" Another question is, "What do you know about him?" Their instructions are to go to Link 2 in the Activity titled "Gallery Walk Video" and watch the two videos. However, while one of the videos is playing, James all of a sudden bursts into song: "Oh when the saints go marching in, oh when the saints go marching in. Oh Lord I want to be in that number when the saints go marching in." This makes it difficult for the other group members to watch and listen to the video and the sound for this particular video is already difficult to hear. One student tells James to be quiet. He stops singing but then starts a conversation with someone else

in the group. This is seriously disrupting the group's ability to concentrate. Finally, a female student in the group draws the group back by saying, "Guys we're supposed to be watching this." The group watches quietly for about 5 minutes then James starts singing again. This is very annoying for me to watch and it is difficult for me to stay quiet and observe. But I remind myself that my role for this session is to observe and that no one is being physically or mentally abused, so I should not interfere. A female student tries to get him quiet and he tells her she can watch the video again at home. She replies, "Yeah but I want to have some notes done if she [Ms. Stevens] asks for them." James continues to talk and at the end of the video, this same female student, looking annoyed says, "All I heard was 'thank you.'" She will need to watch the video again on her own time. Peer intervention was unsuccessful in this instance although several attempts were made.

There were other instances on various days in which James spent a great deal of time distracting the group despite efforts by his group members to get him back on track. One morning, in the English/Drama class, James made a snarky comment about something Ms. Stevens said. However, Faith, the 4th year student who functions as a teaching assistant, turned to him and in a no nonsense tone of voice said, "that's enough James." To my surprise, he went absolutely silent. It was difficult for me not to laugh as I remembered what Ms. Stevens said me to about students "getting schooled" by upperclassmen when it comes to behaviour. It may be that in some instances, like this one, the younger students take a correction from an older student more seriously than they would from a student in their own age group. I had an opportunity to interview James and gained a better understanding of why he did not seem to be fully engaged at Pacific Coast.

He feels that the school is not the right one for him. He is planning to leave to attend a more traditional school. He explains,

Well after I started coming here for a little while ... I figured out this really wasn't working mostly because the style of teaching and the expected style of learning is very different. They don't do a lot of lectures. They expect you to go online and research stuff and learn stuff, which works great for a lot of people. But there's a human element to learning that I'm used to and have relied upon throughout my life. Growing up with two principals and a teacher in the household, I always just asked questions and got answers and had a conversation and so if I have a conversation about something with someone, I'll remember it forever. If I read it online, it will be gone in five minutes. So I've done a lot of work here which seems to be kind of the trend is that you do a lot of work - but I haven't been getting a lot of learning.

James prefers a more traditional style of teaching and seems to equate that with a "more human" style. He prefers lectures and has high praise for one teacher who he says still lectures. He also prefers having long conversations and working through problems. It seems that it is the listening and the dialogue between teacher and student that helps him to better process and retain information.

James also does not work well in groups, as indicated by his behaviour. I am not surprised when he tells me that his favourite subject is math and that his dream job is to sit in a cubicle from 9 to 5 solving math problems and not being bothered by anyone. The facilitative style of teaching, the group work and use of technology all work together so it is easy to understand why Pacific Coast is not the school for James. It took a long time before he agreed to be interviewed. I asked him what made him decide to speak with me. He replied,

I thought that you wouldn't get a lot of views like mine and that it might be useful to have someone who had a negative side because a lot of people love this school ... and they have every reason to. A lot of people really appreciate it, which I'm sure you've heard and everyone has great things to say about it. So just in case you didn't get any negative views on the school or people who had different sides of the

argument, I wanted to make sure you got at least one. I'm different and I get that.

James was right. He is indeed the outlier for this study, although I did hear from teachers about other students who feel that the school is not the right place for them. Also, as discussed earlier in this chapter, there are students who attend the school for four years but must leave and attend elsewhere because they have not fulfilled all of the graduation requirements. According to some Pacific Coast staff members, this has been happening more frequently. However, the principal is working to address the issue by allowing students to complete some requirements at an earlier stage. The extra graduation requirements are impressive and I can certainly see how taking mandatory college classes in high school may increase the likelihood of students pursuing a college degree. Early exposure and success can be great motivators. I can also see the benefit of internships that allow students to pursue an area of interest to determine if they would like to work in a particular field. School and community service hours are also important as it encourages students to be more socially responsible. However, I still found myself wondering about the stress levels of students, as graduation requirements at this school are above and beyond what is required at most U.S. high schools.

First stages of enculturation into the New Tech model

As discussed in section 5.5 of this chapter, teachers of freshmen students play an important role in the enculturation process for students and peers also play a major role in this process. The enculturation of new students begins even before they start attending the school. Each year, students at Pacific Coast visit the middle schools in the district to speak with students about what it is like to attend Pacific Coast and to answer their questions about the school. These visits provide middle-

schoolers with a student perspective on what is expected if they decide to attend.

One staff member explains,

The kids there [at the middle schools] seem to enjoy the chance to ask questions and our kids are very inclusive and very aware that these kids are 12 years old and you might be 16 and they're kind of awe struck because you're an older kid and when you notice them they just love that. So it all starts then with our kids just being really nice to them and answering their questions.

I asked students to talk to me about their first introduction to New Tech. James, the student who has decided to leave, recounts his experience of Pacific Coast students visiting his middle school:

I found out about New Tech through their outreach program where they [current Pacific Coast students] go around to schools and they talk to kids and do a little presentation and get you to want to come to New Tech. And I liked that a lot and they talked a lot about things like not getting bullied. It was a really small school so there's a lot of community and I had been bullied a lot throughout my past in school and so it was really intriguing to be somewhere where you're accepted regardless of your traits and abilities. And that was really special to me so I decided to come here. Also I had friends who were coming here and people close to me were coming here so that was also important.

Although James has decided not to remain at Pacific Coast, he has appreciated not being bullied and is unsure of what the future holds at his next school. However, he is not planning to spend a full four years in high school. He will take a proficiency test that, if passed, will allow him to leave high school early and attend college.

Sarah had a brother who attended Pacific Coast and was two years ahead of her, so part of her introduction was through listening to her brother talk about how much he enjoyed his experience. She also had an opportunity to spend some time at the school and meet some of the teachers. She explains,

Well, when I went to go see the school and when I heard people talk about it, you know, they talked about how there were less rules and how it was more about thinking your way through projects and ... working with people. I remember [another school in the district] and

[another school in the district] it was just bookwork. Bookwork like middle school. I'm fine with that. I do well in it but I learn more – I think I'm stimulated more when I'm in this kind of environment. So that's why I felt like it fit more.

She goes on to talk about her experience of the Pacific Coast visit to her middle school.

So they came in and they spoke to us about New Tech and what it is, what it stands for and why it's different. They talked about some of the things that go on, like rumours about New Tech. Like there is a big rumour when I was coming here [that] they don't have homework ... [Another rumour was] that there's never any written work or that you don't write essays. These are like ridiculous rumours. [Rumours] like we don't have assignments. You have a project to do, so you have to assign your own homework. They would talk about the culture and what makes it [the school] different.

I asked for clarification on what students said about the culture and what makes the school different?

I remember one of the juniors was talking about how he was bullied a lot when he was in middle school. And he talked about how different it was at New Tech and how it's really a safe space there. And I remember another thing they said was that it's a lot of responsibility, a lot of individual work and self-discipline to go there because there's not many rules here. They trust you to listen to your iPod and use your phone outside the building. You know it's your responsibility to not use it in class. Use your iPod during respectable times – not during a lecture.

The narratives of James and Sarah illustrate the kinds of things Pacific Coast students discuss when they make recruitment visits to middle schools. It also illustrates what happens at the beginning of the enculturation process for students. Pacific Coast offered something other than what they had experienced previously, namely bullying, traditional assignments like bookwork and tighter restrictions. The description of life at New Tech resonated with their personal ideas of a desirable high school experience. From this, they internalised, at a basic level, some aspects of the value system and approach to learning within the New Tech model.

The process of enculturation continues with onsite events for incoming freshmen and events for parents to help them understand the New Tech model and what is expected of students. One of the events for incoming students is called Freshmen Connection. It is run by current Pacific Coast students and they prepare a barbeque lunch and participate in team building games with the new students. I located a YouTube video of one of these events. In the video, current students and one alumnus are asked to give advice to the new students. The advice of the alumnus was insightful:

New Tech has a really great culture. I think it's something that sometimes people take for granted and they just assume that our great culture is there. And especially as freshmen I know that a lot of the upperclassmen are going to be running the events ... Keep in mind that ... the culture isn't just going to be there, it's going to be something that you're going to have to maintain and you're going to have to be very active and very participatory and so never take the school's culture for granted and always just appreciate it and make sure that you're participating in it.¹⁵

These comments reveal an understanding that the school's "great" culture only survives if the students continue to maintain it. Newer students have the help of the upperclassmen in this endeavour. For example, once students begin attending Pacific Coast, they are paired with an older student who serves as a mentor. Mentors help facilitate the enculturation of younger students into the New Tech approach. Faith provides more detail about the buddy system:

It's when the seniors pair off with the sophomores and the juniors pair off with the freshmen and everybody has a buddy that they would stay in touch with and this buddy was basically designed and designated to help you with whatever you need. I know for sophomores and seniors – if any sophomore had like a question or a problem, they should feel comfortable enough to come to their senior buddy to talk to them and get advice from them because as a senior you've been here for all four years. You should know about the culture, about the classes, about the teachers, what you need, what

¹⁵ Video not referenced so as not to compromise anonymity.

tools and things you need to succeed here so I feel like that was one of the good things for making sure that we all are not separate in our own little cliques.

Mark talked about the flexibility of the buddy system, explaining that buddies can agree to “trade out” or switch partners if they feel they would work better with someone else or if the assigned buddy is causing a distraction.

These examples reveal a multi-faceted peer-to-peer process of enculturation that involves older students visiting the middle schools to talk about life at Pacific Coast, the older students working closely with the younger ones, which helps them to further understand and internalise appropriate modes of behaviour. In addition, Freshmen Connect serves as another avenue of enculturation that is designed to introduce cultural values to both parents and students. Also, as discussed earlier, teachers of freshmen students play a significant role in the enculturation of new students.

5.7 The uniqueness of being a student at Pacific Coast

Most of the students I spoke with see their school as different from traditional high schools. This was also my perception based on my interviews, observations and participation. Differences include the aspect of facilitative teaching that allows students more freedom in terms of finding answers and solutions to problems on their own, with teachers working more as guides. Also, projects allow students to be creative but also responsible for collaborating and getting projects completed in a timely manner. The trust held between teachers and students allows for more freedom to work on their own, access the internet, have lunch off campus, and have input on the rules and functioning of the school.

The story of how Pacific Coast came to choose their school mascot is particularly enlightening when it comes to understanding how the students see themselves and their school. The particular animal that was chosen is actually a symbol of the uniqueness of the students at the school. Ms. Phillips, a long-time member of staff at Pacific Coast, spoke with me about the selection process. A focus group was hired and their finding was that,

the kids who came here tended to be less 'go with the group,' more individual ... When they showed them pictures of different animals or different objects, the thing that everybody sort of gravitated towards was [this particular animal] because they're very independent but they are also very strong in their community and helping each other. They showed different movies and the kids always identified with [the one about this animal because they] protected each other. And they felt like the kids here did the same. They built this really close friendship with each other because we're so small and everybody kind of looked out for each other.

The interdependence of students seems a bit paradoxical given the focus group findings that New Tech students are more "individual." However, this could refer to students being encouraged to, as Ricky put it, "teach themselves" or that they are less traditional and taught to be independent learners while at the same time sharing within a group. The extensive use of resources available online support the facilitative teaching as well as the group sharing and collaborative activities.

Many students feel that the extremely low rate of bullying at the school is one of its unique features and many were attracted to the school because of this. Based on my observations, interviews, and results from the school-wide survey mentioned earlier in this chapter, it is plausible that this school may have fewer issues with bullying due to their success in building relationships, which includes peer-to-peer

mentoring and teamwork activities. Additionally, students unlikely to be bullies may self-select to attend Pacific Coast because of its reputation.

Another characteristic that emerged as unique during my research is that students have an awareness of school culture and that they are operating in it and are responsible for maintaining it. My findings indicate that this awareness is the result of a deliberate focus on developing a particular school culture, in which all teachers of first year students focus on enculturating them. Additionally, the older students play a significant role in enculturating the young ones through a peer-to-peer process which includes mentoring them.

Lastly, another unique feature of Pacific Coast is that it functions as a demonstration school. As such, the school hosts a number of visitors each year and students conduct the tours, answering questions and hearing visitor comments. This constant flow of visitors includes politicians, journalists, business leaders, and groups from abroad. Certainly, this contributes to student understandings of their uniqueness.

5.8 Chapter Summary

The Pacific Coast site exemplifies the teaching and learning process at a school in which the model has been fully implemented. ICT use is thoroughly embedded (with pedagogy and culture necessitating its use) and collaboration and peer-to-peer processes being the norm.

Teachers expressed a mix of feelings about their experiences. The positive feelings stem from the close relationships developed between themselves and students and the positive behaviours students exhibit, which means teachers do not have to deal with numerous negative behaviours. Much of this is due to the focused

efforts of teachers to enculturate first year students and the strong peer-to-peer support network, in which more senior students actively mentor the younger ones and monitor their behaviour. This aids in the maintenance of a school culture that supports PBL and the high levels of collaboration involved in the process of education.

This collaborative process, in conformance with broader New Tech ideals, includes a vast network of partners which includes local businesses, community organisations, active parents and other community members. This makes education the business of the entire community. These partners offer a great deal of support to the school by providing students with feedback on projects and internships. They also donate and organise fundraisers for the school.

The multi-faceted enculturation process for teachers includes attendance at New Tech Network summer conferences and learning at the conferences is further developed by a strong teacher peer-to-peer support network. Sharing and collaborating with peers is valued and there is time dedicated to collaborative efforts.

There are challenges for teachers, which include a very heavy workload. For some, this leads to feelings of being overwhelmed, with others feeling that administrators do not understand the pressures and that their efforts go unappreciated. In addition, there are tensions within some teacher partnerships and a general feeling that there are not effective solutions in place to resolve the resulting conflicts.

Students expressed mostly positive feelings about their school experiences. They appreciate having what they perceive as freedoms and privileges, like an open campus and having input on school policies and activities. They also value having a

high degree of independence, which allows for more creativity when completing projects. They view themselves as unique compared to other schools in the area.

The use of ICTs is woven into the fabric of life at Pacific Coast. There are challenges with the dissatisfaction of online discussion board use among teachers for decision-making and there are also relatively minor issues with students being distracted by the internet. However, teachers have devised strategies for student distractions and they are kept to a minimum, in part, by peer-to-peer monitoring. ICTs are used extensively by students for collaboration and knowledge sharing inside and outside of school hours. In addition to using Echo and Google Docs, students take advantage of the affordances of Facebook and a number of other digital tools to self-organise and engage in collaborative knowledge building.

The New Tech model is well established at Pacific Coast High and the focus is not on implementation of the model but rather on the maintenance of it. The following chapter explores the shaping of school culture at Midwest High, a school which has recently adopted the New Tech model and is still working to fully implement it.

Chapter 6

Midwest New Tech High School

6.1 Arriving at Midwest New Tech

It is 11:30 a.m. on 22 December, 2011 when I set out for my first visit to Midwest New Tech. The drive from a neighbouring city will take less than half an hour but I leave a bit early to briefly explore the area. As I exit the highway and turn onto the main road to the school, I notice a family restaurant and several fast food restaurants. There is also a discount grocery store, a few other discount stores and a drug store. I explore several areas surrounding the school and find working class neighbourhoods with well-kept houses while in other areas, many of the houses and roads are in quite a poor state. Immediately I have some idea of the possible hardships that students here might be facing. I would learn much more about those hardships during my extended time at the school.

I arrive at Midwest New Tech for my 12:30 appointment with Ms. Rowan. She is the New Tech Director for the school and is employed by the school, not the New Tech Network. I walk up to the large 2-story tan brick building and pull the door handle but it is locked. Office staff can view visitors from a monitor inside and I enter after being buzzed in and proceed to the office. I am greeted warmly by a woman at the desk and then led into the Director's office. Ms. Rowan is petite and stylish with a kind face and we have a short chat before she takes me on a tour of the building. As we walk, she shares information about the students. 90% of them are eligible for free or reduced cost lunch. There are a high number of transient students and many enter high school reading well below grade level. Midwest High had major academic challenges prior to the adoption of the New Tech model. Grades are improving but Ms. Rowan admits there is a lot of work to be done.

The school is in the process of culture change. It began implementing the New Tech model in 2010 and implementation occurred in stages, with the freshmen and sophomore classes first, followed by the junior and senior classes. Some of the classrooms are structured like those at Pacific Coast High. They are doublewide rooms with large windows allowing passers-by to view the activities inside. However, many of the rooms have not yet been fully updated. They are large but do not have the large glass windows. The school will undergo additional building changes in stages due to limited financial resources.¹⁶ Some of the rooms have portable laptop carts but others are equipped with refurbished desktop computers. The ideal is to have all classrooms using laptops to enable students to move around as they collaborate but, again, options were limited due to financial constraints.

Ms. Rowan and I enter the first classroom and I am introduced to Ms. Bolton, an English teacher who is very excited about books that her students have created as gifts for younger students. Her students will be reading these books to the children. It is my first look at a completed project at this school that has real world relevance and an outside audience to provide feedback. Ms. Bolton is energetic and very enthusiastic. She immediately hands me one of the books to examine and I am amazed at how professional it looks. It is no surprise why Ms. Rowan chose to introduce me to Ms. Bolton first. She is one of the certified New Tech trainers at the school and works with other teachers to help them implement the model. I assume I will see the model implemented with fidelity in this class and I look forward to my observations.

¹⁶ Additional funding was needed to change the existing physical structure to match the ideal New Tech classroom structure.

One of the things I notice during the tour of the school is that it is neat, clean, and inviting. Along two of the walls on the first floor there are a variety of inspirational quotes that the students have chosen to display on posters. Quotes like, "Failure is not an option," and the Nido Qubein quote, "Your present circumstances don't determine where you can go; they merely determine where you start." One of my favourites is a George S. Patton quote, "Success is how high you bounce when you hit bottom." These quotes line the cream-colored brick walls of the main corridor on the first floor. My assumption, from listening to Ms. Rowan and viewing the neighbourhood, is that these encouraging quotes are needed to remind students to keep moving forward, as many of them lead difficult lives due financial hardship and other family-related issues.

Unlike the students at Pacific Coast High, students here utilise lockers to store their belongings. They are brightly coloured and line the hallways on both the first and second floors. On one of my subsequent visits, I notice that a student lounge has been created. It is their version of the Hub and is located off the main entrance to the auditorium. The furniture in the lounge is bright and basic but very modern. There are three round white tables with padded red chairs and also a long white rectangular counter with raised red chairs. There are also coordinating cushy red seats with white backs. Some of these seats have what looks like a white shade curved over the back top for a bit of privacy.

Ms. Rowan and I discuss my plans for the research after the tour has ended and she offers to help in any way she can. We decide that I will begin observing after the winter break. One of the things I enjoyed most as a teacher was visiting schools and observing the teaching and learning process as well as the various other aspects

of life in schools. I still enjoy it and am very excited to be in a school that, so far, seems very welcoming and open to having a researcher on the premises.

On Tuesday, 24th January, I meet briefly with Ms. Rowan. Teachers have been notified that I may be visiting their classes. I am given a Midwest High handbook and a list of teachers and classes along with a class schedule. I decide to visit a Biology/Health class taught by Mr. Loch, the Health teacher and a certified New Tech trainer and advocate, and Ms. Burke, the Biology teacher. It is a class for sophomore students.

The Classroom: Combined Biology and Health

This doublewide classroom has two teacher desks in the front of the room, rows of tables with desktop computers and a lab for experiments and workshops (small tutorial sessions) in the back. To the left of the room there is a white board on a wide wall which is used as a visual organisation aid for student projects. The steps listed on the board are: 1) the contract; 2) the outline; 3) the rough draft; 4) the critical friends process; 5) project complete; 6) practice walk-through; and 7) project presentation. A sticky note identifying each student group is posted whenever a particular phase has been completed. It is an excellent visual to show progress being made as well as a way to indicate when help is needed and if timing needs to be adjusted on projects. This visual is also an indication of the level of guidance needed by students to help them stay on track to complete their projects.

On one of the white boards there is a web address for The Center for Wrongful Convictions and a news article about students at Midwest New Tech working on a DNA project. Students are preparing for a project titled, "The moral implications of DNA." I listen carefully as Mr. Loch tries to make the topic relevant

to the lives of the students. He begins by talking about what is possible with the science of DNA and provides examples, such as being able to choose children's eye colour and of possibly detecting Down's syndrome in an unborn child. He also discusses implications for those who have been wrongfully convicted of crimes and then released after they were exonerated by DNA evidence. Ms. Burke has called upon outside expertise to further add to the relevancy of the project and to enhance student interest. Speakers from The Center for Wrongful Convictions are scheduled to speak about the role of DNA evidence in their work. Students will hear from someone who has had a personal experience involving DNA evidence.

During another session in this class, I observe multiple activities happening at the same time. One of the ways that New Tech schools break with tradition is by foregoing the long lectures and instead having students participate in a variety of activities during a class period that are designed to meet their needs. Some students are working on their projects at their desks while others are studying for an upcoming test. In the front of the room, Mr. Loch is working with individual groups to help them move forward with their projects. And in the back of the room, Ms. Burke is workshopping (providing focused lessons with small groups of learners) on the topic of DNA. I listen to Ms. Burke and watch as students take notes and ask questions during this session. It is really a mini-lecture session, with lots of effort made to ensure that students understand what is being taught. Ms. Burke provides a lively session, as she is naturally energetic and also quite entertaining.

I leave Ms. Burke's workshop to observe Mr. Loch working with individual student groups. He lets the group members know that one purpose of the class project is to raise awareness and he explains the importance of using social media to promote awareness of certain issues. He asks group members if they have any

clarifying questions. The team leader for the group asks who the audience will be for the project. The student is not given a direct answer but is referred back to the entry document to find the answer to his own question. Mr. Loch asks the group to decide what “piece of the pie” they want to focus on. He then leads them back to the entry document to determine the options. Mr. Loch then discusses the importance of social responsibility and lets students know that they may choose to focus on that aspect. He explains how the use of social media can be used to raise awareness for positive issues and that the next step is for them to decide on their topic and the social media site they want to use for the project.

After this has been decided, the group will work on the group contract, deciding who will work on each aspect of the project. A goal is set to have this done the following day. The group members go back to their computers to begin the process and Mr. Loch calls the next group for their consultation. This group has already decided to focus on miscarriages of justice. Mr. Loch emphasises that they will need to use social media in a professional way and the group leader suggests recreating a performance involving a character who has been wrongfully convicted of a crime. The teacher asks them to talk about their next steps and the students suggest looking at the process of how one becomes convicted. Mr. Loch then suggests that they might want to review the cases on the Center for Wrongful Convictions website to look for the common themes as they develop their project.

Mr. Loch continues to meet with groups to discuss their projects. Meanwhile, Ms. Burke has finished workshopping with students and moves around the room to help students prepare for an upcoming test on DNA. Some of her questions to individual students are: Can you give the letters of all the nitrogen bases? What makes a protein? What makes up the rungs of the DNA ladder? How many bases

form the steps of the DNA ladder? If students are unsure, she gives them clues and when they answer correctly, she has a number of enthusiastic responses like “Yeah Baby!” “Whoa hoo!” “Shut up!” Students seem to enjoy this and smile or laugh during the process.

I have only been in this classroom for a short while but I can see that there is something very special going on here. I mention this to Ms. Burke and she replies, “Well, we do have our routine down.” But what I am seeing is the result of more than simply having a solid routine. There is a high level of engagement in the room. The care and concern shown by both teachers is obvious and there seems to be a high level of respect on the part of both teachers and students and for the most part, the students are on task. I do notice one student who is reading a non-school related book. She is hiding it under the desk and reading it when she thinks the teachers are not looking. She is curious about my presence and asks if I am “keeping tabs on the class.” I explain that I am a student doing research. During our brief conversation, she talks about how well organised this class is. However, she did not feel the same about another one of her classes, saying, “We don’t do anything in there.” She suggests that I visit that class.

The Classroom: Combined Business and Economics

I decide to follow her suggestion and visit the class of mostly junior year students. When I arrive, the teachers, Mr. Branch and Ms. Sanders, are having students use the internet to investigate information on how to complete tax forms. Mr. Branch addresses the students saying, “We’re trying to get you to be more independent learners. You do the research. Research the internet or whatever your choices are.” From observing a while longer and speaking with both teachers, it

seems that they are both struggling. Both told me that this is their first year working within the New Tech model and that it's been difficult to adjust. As mentioned earlier, junior and senior classes were phased in after freshmen and sophomore classes. Ms. Sanders feels they are competing with Facebook for students' attention. She also feels that the transition is easier for the younger teachers who have grown up with computers. Both teachers will soon be retiring. I ask her about training for teachers and she said there was training during the summer but Mr. Branch was unable to attend due to illness. It seems that both teachers are nervous about the increased use of technology. Mr. Branch shares that more time is needed to phase teachers into using technology. He mentions the New Tech summer training but said putting the New Tech model into practice will take time. This is understandable. However, they seem to be a bit lost in the transition.

There is a huge gap, in terms of implementing the model, between the Biology/Health class and the Business/Economics class. As I spoke with additional teachers and observed more classes, I saw that the implementation varied widely between classrooms. To understand why this was the case, I needed to understand more about the overall school context. Additionally, I needed to develop an understanding of teachers' feelings and experiences about transitioning to the New Tech model. The following sections explore these issues.

6.2 Teacher Experiences

Feelings about adopting the New Tech model

Teachers expressed a variety of feelings about the decision to adopt the New Tech model. Ms. Rowan was instrumental in the decision-making and the planning and implementation processes along with district administrators. Teachers were also involved, although there were some who had doubts that the model was right

for the school. For example, Ms. Rowan explained that some of the older teachers were nervous about the extensive use of technology. This was confirmed by my earlier conversations with Mr. Branch and Ms. Sanders. Additionally, two other middle-aged veteran teachers, Ms. Burke and Ms. Lyons, would often joke with me about their use of technology, saying, “We went from no tech to New Tech.” However, it was not only older teachers who were concerned about the extensive use of technology. Mr. Marshall, a younger English teacher, felt that the school didn’t necessarily need all the technology. One of his main concerns was the cost. He explained, “I don’t know if spending \$4 million on technology is really where we are. We can do it without the technology and that was the issue that I had.” However, he also stated that most teachers understood that a change was needed and that New Tech provided “a lifeline in a sense” as a new plan to improve student achievement and avoid punitive measures by the State Board of Education. A more detailed discussion about the issues surrounding the use of ICTs is discussed later in this section and in section 6.3 of this chapter.

Ms. Burke was initially not a fan of the model. Her concern was that inviting people from the business arena to come in and provide real-world problems for students to solve was an important part of the model and she had reservations about this aspect. She explains,

I think we had 70 to 80% of our kids reading below grade level. I’m not going to go to my carpenter and [have him] give me a problem to solve when I’m not a carpenter. So I just thought 1) I didn’t think our kids could do it, and 2) I didn’t think we had enough industry businesses around this depressed area that would work.

Ms. Burke’s feelings about the model have changed and she is now “loving it.” She has developed a solution to her initial concern by looking beyond the immediate school area to locate experts to work with students on projects, as was illustrated

with the DNA project. Another reason for her changed outlook has to do with her teaching partner, Mr. Loch, and his role in helping teachers implement the model. However, he was also initially apprehensive about adopting the model.

Prior to the adoption of the model, Mr. Loch observed a New Tech school located in a farming community with primarily white students, a very different demographic from Midwest High. It was a subsequent visit to a New Tech school with a demographic similar to Midwest High that convinced him to consider the possibilities of the model for his students. His thinking about the model shifted,

Once the competitiveness got into me, that was my changing moment. You know, when I went from being critical of the process to really looking at it thinking I can do it and I can do it better than what I'm seeing. I think that's what turned the corner for me personally.

Some of his earlier apprehension stemmed from not being sure if the model was right for the school's students and his own concern about his ability to implement a very non-traditional approach to education. When these were no longer major concerns, he was better able to internalise and work toward applying the new approach. The level of internalisation is revealed as he speaks further about his feelings. For example, he shared that he has been "energised" by many aspects of the model which have made him a better teacher, more specifically, the cognitive coaching aspect that puts the students more in charge of their learning by allowing them to find answers to questions for themselves. Another important aspect for him is the impact of the "who cares?" question that teachers consider when designing student projects. "I really feel like everything we do is leading itself towards the real world." Additionally, Mr. Loch is especially enthusiastic about having the opportunity to observe his peers teaching and to share ideas. One of the

criticisms of traditional education, discussed in chapter 2, is that teachers work mostly in isolation from their colleagues. However, this is not the case here.

Ms. Bolton is also excited about the model. This was obvious from listening to her and watching her teach. Ms. Bolton, like Mr. Loch, feels the New Tech model has challenged her to continually think about how she can make projects relevant to students' lives. I had an opportunity to speak with one of her former students, who is now preparing to become a teacher and was also observing her classes. His comment about her was that she was New Tech before New Tech came along, referring to her integration of technology in the classroom. One of her current students used the exact same phrase to describe her and made mention of her use of smartboards and microphones and how she would help other teachers learn how to use technology.

Not all teachers felt that the model should be adopted for the entire school. There were some who felt that the model should have been implemented as a 'school within a school' to give students a choice to either remain traditional or go New Tech. Mr. Howard, a science teacher, felt that some students would be better served in a traditional school because they need more structure. He explains,

If we had separate learning communities within the school or if we merged with the [other schools in the district] and had the New Tech High School, the performing arts high school, the college prep high school, then all the kids chose where they want to go [and] if they don't function in this one area correctly, [we could] plug them in somewhere else. That would be a big help.

Mr. Marshall believes that if the New Tech model is run with fidelity, then it "can make a difference." However, he agrees with Mr. Howard and feels that the model would be more "powerful" if students could choose to go New Tech or remain

in a traditional setting because some students, the “more intrapersonal ones” work better on their own while the “more interpersonal ones ... work well in groups.”

Teachers were aware that these options were in place at other New Tech schools. In fact, one of the New Tech schools that Midwest teachers visited was set up as a school within a school and students make a choice about whether to attend New Tech or another school on the same campus.

Teachers voiced their opinions about alternative options for implementing the model. However, when it became clear that the entire school would become a New Tech school, some teachers decided to leave the school. Ms. Avery, the library administrator, explained that there were teachers who decided to retire before the model was implemented and some accepted jobs elsewhere. Some of the more senior teachers may have opted to remain to avoid a decrease in pay. Teachers are paid according to years of experience and educational attainment. However, there is usually a cap on years of experience. Those who remained would need to undergo a cultural shift in order to become New Tech teachers.

The cultural shift: Experiences of enculturation

The cultural shift from teacher to facilitator seemed to be an easier process for teachers whose beliefs and practices were philosophically congruent with those of the New Tech model. Mr. Loch explains,

So for me personally the New Tech concept isn't a huge leap ... me as a teacher it hasn't been much of a challenge because I felt like I was always walking [in] that direction ... I do believe it's best for our students in the way that they see the world and the way that the world has been exposed to them through computers and smart phones and technology and television and so on ... that getting away from the traditional style of teaching makes a lot of sense to me.

However, the process of a traditionalist teacher becoming a New Tech facilitator can be quite challenging. It involves a cultural shift in how one thinks about the education process and it requires extensive work, collaboration and reflection to bring this to life in the classroom. Ms. Lyons vividly described the difficulties involved in making this shift:

The first year you get into this, you have to dig the ground with your bare nails ... It's very tough on your family because you've taught a certain way. You've been trained a certain way ... you know nothing else and now overnight you suddenly go from a teacher to a facilitator with technology and with all these expectations. There's a pressure on you which is unbelievable.

Ms. Lyons shared stories of many late nights spent collaborating with colleagues when the model was first being implemented in 2010. She and others told me that, at times, they were literally in tears. They were among the first volunteers to pilot the transition to New Tech and the time commitment required to understand and implement this new model was sometimes overwhelming. Three years on, there is still a huge time commitment for teachers as they implement the model and try to stay afloat with all of their other responsibilities. Mr. Loch indicated that one of his duties as a trainer and advocate was to ensure that the school was developing culturally. I asked him to elaborate on this:

When you go from the traditional sense of a school where the rows are straight and the students are quiet, ... as long as the teacher has control of the room then they must be a good teacher ... transition that over into what New Tech is supposed to look like culturally where the students have more freedom and the teachers approach their position not as masters of their content but really as facilitators or almost tour guides in a sense. I think there's a process getting to the point where especially teachers who have been in the system for a long time ... are used to being evaluated by their command and control of their room. With the New Tech system, it's more are you generating the proper feeling so students feel comfortable in your classroom so that they can ask the questions and develop curiosity and begin researching on their own the material it is that they need to cover.

Here Mr. Loch gives insight into some of the significant cultural elements being developed at Midwest High, which contrast with traditional understandings of the educational process.

As Mr. Loch indicated, this shift from teacher to facilitator implies different ways of thinking and different sorts of relationships and responsibilities. Ms. Lyons has a similar view and elaborates saying:

As a teacher, we're told we are facilitators. I think that's a very big difference in a teacher's thinking ... Now a facilitator facilitates and the journey [responsibility for learning] is on them [the students]. So you set it up and you move around and you guide them but you don't give them answers ... You answer according to the New Tech method ... You answer a question with a question.

This passage also illuminates the role, responsibility and relationship of the facilitator to the student. As the role of the teacher changes in the direction of a less directive mode, the student takes on a more participatory role in his or her education process.

I observed the process of facilitative teaching here and watched students being encouraged to try and answer their own questions prior to asking teachers for assistance. One phrase used in classrooms at Midwest is "Ask three, then me." Alternatively, some teachers would ask, "How have you tried to find the answer?" Students were encouraged to ask classmates, seek information via the Internet, or consider other alternatives to find answers to their questions.

Teachers here are enculturated into the New Tech model similarly to those at Pacific Coast. They attend the same training conferences and there is also a peer-to-peer network of support. However, the enculturation process is more challenging because of the very different context. Midwest is an academically and economically challenged traditional school transitioning to the model whereas Pacific Coast is a

well-established New Tech school with a history of academic success and a significantly lower percentage of students who qualify for free and reduced cost lunch. Teachers here face numerous contextual issues which will be more fully described later in this chapter. The following section examines teacher experiences of two components of the New Tech Network's enculturation efforts.

New Tech summer conferences and the peer-to-peer support network

I asked several teachers to reflect on their experience of the summer training conference or their attendance at previous New Tech conferences. Some teachers enjoyed the experience. For example, Mr. Samuels, a newly hired first year teacher, described his experience as "extremely stimulating" and said it provided a good overview of the New Tech model. He participated in a project with a group of mixed subject area teachers and said he was "thrown into a group," given a project and his team teacher volunteered him to be the leader of a group of young teachers. He mentioned that many of the veteran teachers in other groups seemed resistant, making statements like, "We've been doing this for so long and that for so long." His thoughts were, "If you're not accepting change and aren't flexible, then there's something wrong with that because things change daily."

Mr. Howard was not happy with his experience at his first conference.

I didn't necessarily like the way that they did things because they said well, one of the things they want you to do is become really frustrated and I don't see that as being a point when you have four days ... If you're being forced to go into this model, and I'm not saying it's a bad model, don't get me wrong. Why should they make you feel stress about it? It should be a simple and easy and friendly transition because at that time I had been teaching for 18 years.

Others characterised the training as being out of their comfort zone. For example, Ms. Parks, a veteran math teacher, felt that she was being thrown “in the deep end of the pool.”

I believe the intention is to make you feel the same anxiety when they're presenting - here's your project, now go take care of yourself because it has to be student-centred learning. The kids have to drive their own learning to have any kind of buy-in. It was not comfortable ... I'm a direct person and I would ask a direct question and I would get a vague answer, so there was a level of frustration that was intentional. I do feel like I bonded with my group. I believe that's intentional as well as part of the training. It was stressful.

In addition to the teaching methods, Ms. Park also mentioned building relationships with her group as being an intentional part of the process. During the conference, school members work closely together to develop school norms and various plans to implement the model in their schools. This requires a great deal of collaboration. In addition to work time, groups also spend time eating together, going out together and getting to know each other better.

Ms. Burke also used the phrase “being thrown into the deep end” to describe her experience of the conference. She too understands that the point was to have teachers experience what their students will experience. She spoke about the value of the experiential learning taking place, saying, “I don't think they wanted to just hand us - here's your notebook and go mimic it, because then you're really not internalising it.”

Enculturation is indeed a process of internalisation on some level. However, there are things that can hinder the process, for example, if one is unable to follow what is happening at the conference. Such is the case with Ms. Marks, a newly hired but experienced teacher. She described the conference experience as “overwhelming and still not informative enough for a new teacher.” She said she felt

“lost” because there was nothing for her in her particular subject area. She worked on a project with a group in a different subject area but didn’t feel that it met her needs. She told me she wanted to know how to create a project from scratch but instead got, “I gave you an overview, so now let’s take what I gave you and do it [the project] [instead of] help you find your information.” Ms. Marks mentioned that resources on how to develop projects are available on Echo. However,

You still need somebody to walk you through that because if you’re not familiar with Echo ... it’s just information that’s just out there and it’s so much, so it can be overwhelming.

After the conference, she sought help from Ms. Bolton. Ms. Marks commented that Ms. Bolton was able to give her the “New Tech for Dummies” version of how to create a project. She explains,

All praises to [Ms. Bolton!] It’s like whatever problem you have, [Ms. Bolton] is Captain Save Us. It’s like even when you ask teachers that are experienced that have done it for three years, it’s like, ‘Have you asked [Ms. Bolton] yet?’

This illustrates how the peer-to-peer process facilitates enculturation. Just as at Pacific Coast, the onsite trainers here work to provide sustainability for the model. However, from my conversation with Ms. Marks and other newly hired teachers, it was clear that they wondered why more teachers within the school were unable to assist them.

Shared leadership is an important cultural element in New Tech schools and the duties of onsite teacher trainers are considered part of a shared leadership agenda. Another example of shared leadership at Midwest is that both teachers and administrators run afterschool meetings and professional development workshops. This is not solely an administrative domain.

The collaborative process is another element of the process of enculturation. Mr. Becker, a History teacher, spoke with me about what he has learned from other teachers and provides more details on the collaborative process as well as an example of what he learned about digital media players during an afterschool meeting. He states,

I can't tell you how many times I've been in a meeting and I'm like, 'Oh that's how they do that.' The kids want to listen to music when they're working but it becomes an issue when they're searching YouTube to find a new song. We've got a teacher that mentioned at a meeting last week, 'I don't mind the kids listening to music when I'm not instructing or doing something but I want them to have a 30-minute playlist set somewhere where they can get in and not have to hunt the music down.'

I was in attendance at that meeting and the teacher he is referring to is Ms. Bolton.

Mr. Loch also spoke about what he has learned from his peers:

Ms. Bolton is an example. Every time I go in her room and spend a little bit of time, I'll look and she's doing something new and I'll think, 'Oh I really like that idea. We're going to steal that' and I'll ask her about it and she loves sharing so it's really neat.

Again, these are additional examples of the change from teachers working alone without much chance of learning from their peers to a model in which learning from peers is supported. Interestingly, all of the examples above refer to Ms. Bolton. Even when I was observing classes, several teachers suggested that I visit her and Ms. Cannon's class or Mr. Loch & Ms. Burke's class to really see how the model is supposed to work.

Some teachers struggled with the experiential method used at the conference to introduce them to the model. Frustration, anxiety, and stress were the words used by several teachers to describe their conference experience. However, most teachers understood that this was intentional and that these are the same emotions that students will feel when they begin working under the model. The peer-to-peer

support network plays a crucial role in helping teachers internalise, on a deeper level, what they have learned from the conference to apply it in their own classrooms. There are also instances, as in the case of Ms. Marks, where the school trainers do a better job than the facilitators at the conference to help teachers understand the model.

Challenges to Implementing the Model

Issues of poverty affecting teaching and learning

During one of my later visits to the school, I had an eye-opening experience that helped me to better understand the struggles of students. I have previously stated that 90% of students are eligible for free or reduced cost lunch. That statistic does not begin to convey the seriousness of the issue. One's understanding deepens tremendously when an effort is made to survey, up close, what poverty looks like as I did when I accompanied staff members on student home visits to speak with parents and students about an upcoming end of course assessment. According to Ms. Rowan, approximately 50% of the student population live in an area I will call Willow Way, one of the poorest areas in the city. Ms. Rowan, Ms. Lyons, Ms. Taylor (a principal from another school in the district) and myself visited homes in this area.

As Ms. Rowan drives us through the neighbourhood, I see numerous dilapidated houses, some with wood and plastic covered windows. Some of the homes look abandoned even though there are people living in them and I wonder if some of the houses even have electricity. Several streets have deep potholes that are filled with water caused by heavy rain from the previous day. Other streets have tall grass and weed-filled areas that are obviously being used as dumping grounds. These fields are littered with old mattresses, empty bottles and cans, food

wrappings, old tires and an overabundance of other garbage. Not even the overgrown weeds can conceal the amount of waste in these areas. As we drive along the road, Ms. Lyons comments that there could be dead bodies in there. The thought is plausible given the high homicide rate in the city. Gang violence in the area is rampant. Ms. Rowan points to a house a few blocks from the school that had been riddled with bullets by gang members one Sunday afternoon. Their target was a student from the school who was in a rival gang. Fortunately, the student was not home. There were two people upstairs in the house but they were not injured.

Ms. Rowan goes on to explain that there is also a serious drug problem, with drug trafficking occurring at popular truck stops in the area. In addition, there is concern because some residents are selling their government issued food cards to small convenience stores to get cash. The stores purchase them for less than face value and process them as if groceries were purchased. I was informed that law enforcement officers were told not to interfere with these activities as they are being surveyed as matters of national security.

We drive from Willow Way to another nearby area with similar issues of poverty and I learn about some students who are essentially on their own without supervision from a parent or guardian. In one case, a student's mother decided to leave town to live with her boyfriend. Her son did not want to leave with her, so he lives in a trailer house with his girlfriend and attends school and works. There is also a popular senior who has survived extreme circumstances, having experienced hunger pains along with his younger siblings because of his mother's drug addiction. He has spent a good deal of his life living in foster care. I am aware of three staff members who have taken students who seriously needed help into their own homes to live with them. There are certainly other students trying to survive very difficult

circumstances. These issues tremendously impact the teaching and learning process as Ms. Avery explains,

[Students] have a lot of difficulty with where they come from, familial supports, importance of education in the home, support for education in the home.

After the home visits, I go to my car and just sit quietly for about 15 minutes, thinking about what I have just seen and heard. I am reminded of the first time my father talked to me about his poverty-stricken childhood. It was his high school education, a love of science and tenacity that propelled him to learn a trade and support a family, sometimes working three jobs, at a time when blatant discrimination against African Americans made it a constant challenge to secure one well-paying unionised job. Today, most students will need an education beyond high school to earn a decent living wage. Seeing the harsh reality of life for many of these students and hearing their stories is a reminder that any one of us could, at some point in our lives, for one reason or another, find ourselves living in poverty. One question keeps playing over and over again in my mind. 'How can I help?' In this moment, it is obvious to me that my being at this particular school is about more than just the research and I feel overwhelmed by a deep sense of responsibility. I sit staring into space through the windshield and I know I need an answer to my question to jolt myself out of the momentary shutdown. I decide that I will find out what others are doing to help and I will participate in those efforts.

Later, I learn that one of the staff members coordinates donations of clothing for needy students and another staff member keeps food (granola bars, cereal bars, crackers, etc.) on hand because some students just don't have enough food at home. I decide to participate in these efforts. My contribution right now seems small but I

know my connection to this school, these teachers, and these students will last long after the doctoral thesis has been completed.

The needs of the students here are many. The school offers students a bag breakfast during the first class of the day and there is time to eat it before and during the first five minutes of class. Lunch and even dinner is available for students who participate in the afterschool program. The school provides a clean and safe environment and meets more than just the educational needs of students. Given all of the social challenges, the poverty and violence, it became clear to me why Ms. Rowan referred to getting an education as a “life or death” situation for many students.

Ms. Darling, the assistant New Tech Director, feels that sometimes teachers do not understand the effects of poverty. For example, she spoke with me about the need for more teachers to work to build relationships with students and understand them better. She proceeded with an example of a student who was sent to the office by a teacher for noncompliance with the school dress code. He was wearing what appeared to be gray trousers instead of black ones. What the teacher did not know was that the pants were black but they had been washed so many times that they turned gray. Ms. Darling felt that, had the teacher taken the time to ask some questions, she would have understood that there was no need to send the student to the office. Ms. Rowan echoed the sentiments of Ms. Darling, explaining that it is difficult for middle class teachers to understand what life is like for many of the students.

An important factor in changing school culture is the development of relationships. However, to do this, teachers need to have some understanding about where students come from and their circumstances. Some teachers do this well and

others, as explained by Ms. Darling, could use some assistance. Also, some teachers seemed more skilled than others at dealing with problem behaviours. It is easy to take these behaviours personally and respond in a manner that may escalate the behaviour. Additionally, there are issues around differences in what is considered normal and appropriate behaviour for students at home and what staff consider appropriate behaviour at school. For example, for some students the use of profanity in conversation is normal. However, the school is trying to create a professional culture and views the use of profanity as unprofessional. One of the things Ms. Parks, at Pacific Coast, pointed out was that I would not hear profanity being used by students at her school. Indeed, in my five weeks there I only heard one student use profanity in a conversation with other students and he was the only one in that group using that language. At Midwest, hearing students use profanity in conversation with each other is the norm.

The financial hardships contribute to some of the behavioural issues that teachers struggle to address. The school will be instituting PBIS (Positive Behavioural Interventions and Supports)¹⁷, to assist teachers in learning how to increase positive behaviours. However, the implementation has been postponed due to so many other initiatives being implemented. I provide further details on this matter later in this chapter.

In addition to teachers' mixed feelings about adopting the model, poverty issues, behavioural problems and the work needed to better develop student-teacher relationships, there were also administrative challenges that hindered the development of New Tech cultural values and implementation of the model.

¹⁷ A behavioural intervention approach aimed at enhancing students' academic and social behaviour.

Administrative division – Who’s in charge?

At the time of my first visit to Midwest New Tech in 2012, the school had a total of four administrators: a Principal, Mr. Simpson, who was responsible for overseeing all operations of the school; an Assistant Principal, Mr. Martin, who explained that his main responsibilities were “to deal with discipline issues, supervise custodial staff and evaluate staff;” Ms. Rowan, the New Tech Director, described her main duty as being “to ensure that the New Tech model is implemented with fidelity;” and an Assistant New Tech Director, Ms. Darling, who served as the data coach helping teachers to interpret student assessment data and develop plans to increase academic performance. Ms. Darling also provided informal feedback to teachers on their classroom practice. This was not tied to any formal evaluation but rather it was intended to help teachers improve their practice. Ms. Rowan explained that the high number of administrators was necessary to handle the numerous initiatives being implemented to improve student achievement.

It did not take long for me to recognise that there was a serious division within the school leadership team. The situation seemed to be exacerbated because it appeared that Ms. Rowan, the New Tech Director, had been overseeing the freshmen and sophomore classes, who were the first to implement the New Tech model, and Mr. Simpson, the principal, had been overseeing the junior and senior classes, who were not fully implementing the model but were supposed to be. Once the entire school became a New Tech school, Mr. Simpson, according to many of my participants, made it clear that he was at the top of the chain of command and that they were not to take instructions from Ms. Rowan. There were several teachers who told me that Mr. Simpson said they did not have to follow the New Tech model.

I wanted to interview the principal, as he was the building leader. I spoke with him personally and he agreed to be interviewed. However, I was stood up twice without warning or explanation.

This division caused much anger and discord among the staff. Many were loyal to Ms. Rowan and very vocal about the situation. Ms. Bolton felt that the principal's behaviour was a result of wanting to have all the power and it caused major problems with the implementation of the model. Some teachers used war terminology to describe the situation. Ms. Bolton explains that the principal's behaviour,

It drove an even bigger wedge because you know you rally the troops when one of your own is being attacked. So it's been ugly like that for three years and that truly is such a division ... I mean it seriously feels like we're on the front lines of battle. It feels like we're battling two things. We're battling this battle of getting kids to care about their grades, getting kids to work, helping kids to read and write and then we're battling this.

Mr. Marshall described the atmosphere when leaving the confines of his classroom: "Once you walked in the hall, it was like going from a Paradise Island to Iraq in a lot of cases. It was a really fraught environment."

Mr. Loch spoke more about the differences between Mr. Simpson and Ms. Rowan. He explained that there was an appreciation for Ms. Rowan because of her "reflective principles ... rather than punitive damage." He felt that she was supportive and understood the growth process for teachers in the New Tech model and allowed them to grow, whereas some teachers of junior and senior students were receiving negative evaluations and "were feeling defensive because they were feeling like they were being attacked." Informal conversations with some teachers of junior and senior classes confirmed this, with two teachers saying they knew they were on the principal's "hit list."

Mr. Marshall also talked about how confusing and frustrating this was for teachers, with one administrator saying, “Do New Tech” and the other one saying, “Don’t do New Tech, do 8-step [an intervention strategy].” He spoke with the superintendent about the situation, telling her, “You need to bridge that divide ... You have to have your corporals on the same page when you’re going into battle.”

Ms. Burke also spoke with me about the importance of making sure that all teachers and administrators, including district level administrators, are on board when adopting a new model. She felt that people just weren’t “on the same page” and she stressed that moving to the New Tech model is “literally a change in culture;” so everyone needs to understand the process.

It was literally a school divided and this severely hindered many teachers from working to understand the model and the process of developing a culture that is conducive to the establishment of the New Tech model. However, when I returned to continue research at the school in August of 2013, a new principal, Ms. Gibson, had taken over. Her style was very different from that of Mr. Simpson and she seemed committed to implementing the model with fidelity. She remained in her post during my time at the school. I later learned that she left in 2014 to accept a higher-level administrative position in another school district. The school board then appointed Ms. Rowan as principal in 2014.

A pressure cooker environment

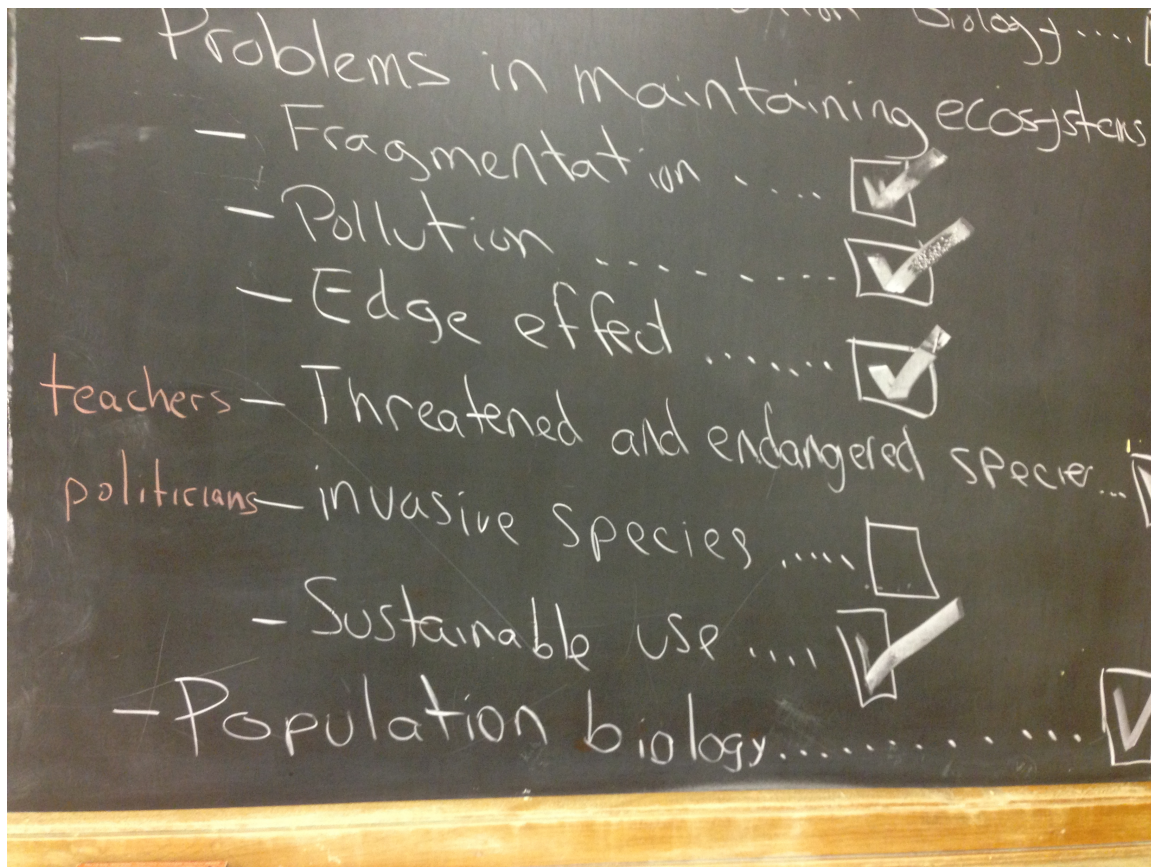
An education is indeed a life or death situation for many students at this school and administrators and teachers are under tremendous pressure to ensure student test scores continue to improve and that students are prepared for college or a career after graduation. There are numerous initiatives that teachers are

expected to implement. One staff member, Ms. Avery, spoke with me about several of these initiatives, which include a literacy initiative, interim testing for each subject area, and NWEA and Star testing. Teachers must also employ an intervention strategy called 8-step and there are meetings to analyse student data and plan for remediation. There are also sessions to train teachers on how to conduct workshops in their classes as well as meetings to plan for flextime (time allocated during the day for remediation and extra-curricular activities for students.) Ms. Avery continues,

The list goes on and on and on. And so if you put all those out on the table, and like I said, none of them [the initiatives] are bad ... It's too much going on and they [teachers] can't wrap their heads around it. They can't institute all of them.

In addition to this, there have been budget cuts and salary freezes and increases in the cost of health insurance for teachers. Also, at the time of this study, the school district was facing a significant financial deficit and teachers were even more concerned about job security when a new state teacher evaluation process was announced. They will need to learn the requirements of this process but it has been confusing, as the State was still making changes and working to finalise the details during my time at the school, so teachers were receiving revised information almost weekly. Teachers were frustrated with the educational decisions being made by politicians and Figure 1 below illustrates their feelings about politicians and their impact on teachers. It shows comments inserted by a teacher on a classroom blackboard with information about ecosystems.

FIGURE 1: Teachers as an endangered species



It is within this chaotic context that teachers are working to implement the New Tech model and the tensions and challenges continue to mount. Some participants seem to be embracing the model wholeheartedly while others have expressed feelings of being overwhelmed by the amount of paperwork and time involved in planning projects and the time involved in planning for the numerous other initiatives at the school. For example, Ms. Lyons spoke about the extensive planning process for the development of projects:

We never wrote our lesson plans the way we have to write them now. We have to write literally our project planning document which has everything from the beginning to the end. We have to keep thinking outside the box. We just can't open a textbook and say I'm going to teach chemical formulas today because now I have to bring the real world in and we were actually encouraged to ask ourselves this question, "Who cares?" So I'm going to teach chemical formulas so

who cares? So I have to find something in the real world where it's applicable so they care.

Ms. Lyons teaches three different subjects so it is unclear how she is supposed to manage. Most of the other teachers teach one or two subjects. I would agree that real-world relevancy is important and should be the goal. However, these types of lessons take longer to plan and the number of subjects taught by a teacher impacts the planning time.

Ms. Brown, an English teacher also spoke about the endless planning for the development of projects:

Planning and pre-planning, post-planning, during planning. I just feel like there's too much of that ... there is so much more you wanted to do but you couldn't because you couldn't get it organised because I'm not going to be the type of person that spends 10 hours working at this. Not that I refuse. It's just that there are other things also.

The issue of time is again raised by Mr. Howard, who suggested that maybe young first year teachers would be better suited to work at the school. He makes the assumption that they don't have as many responsibilities in life as older teachers, saying, "This [work] could be their life [but] in my case and a bunch of other people's cases, this can't be our life. This is a small part of our life." He makes clear that he is not against New Tech but it is all the other responsibilities beyond teaching that make life difficult. He is specifically frustrated with having to teach a different subject or subjects each year and feels that planning for projects would be easier if he could teach the same subject each year.

Additionally, some teachers would prefer direct instruction from administration just as some students would prefer more direct instruction from their teachers. For example, teachers were tasked with preparing rigorous end of course assessment questions for students. They were required to use the State's

online “Assessment Rigor Analysis Chart” to develop and categorise the questions. Teachers complained that they were not given instructions or professional development on how to properly design these questions. They said they were told that all the information needed could be found online. Mr. Howard said sarcastically, “It’s the New Tech way of doing things. They want us to figure it out for ourselves.” Teachers submitted their exams to administrators and they were returned several weeks later with comments about them not being done correctly. This caused anger and frustration, as teachers felt that they already had so many things to get done and it would have saved time if training had been available when they were first asked to develop the questions. Many were in a frenzy trying to revise the questions to meet the deadline.

Newly hired teachers were impacted by the constant frustrations voiced by their colleagues. Mr. Samuels, a new first year teacher, discussed the disconnect he felt with some teachers, saying he wonders “if we’re all on the same page and have this sense of family and togetherness and not just say it but actually feel it, believe it, and live it.” It is important to note that he has had the advantage of being partnered with a teacher who is passionate about the model and knows how to fully implement it. His comments about his co-workers reveal a conflict between those who fully believe in and implement the New Tech model and those who, for various reasons, do not. The impact on new hires became even more apparent as I continued to interview them. For example, another young first year teacher, Mr. Grey, shared that a veteran teacher suggested that he would be better off finding another job where he would not have to be bothered with so much paperwork. All the work done by Ms. Bolton to help new teachers better understand and internalise the model was effectively being sabotaged by expressions of anger, frustration, and

suggestions that new teachers would be better off elsewhere. The new hires were internalising these messages on a very deep level. Mostly all of the new teachers who were there when I conducted my research left after just one year at the school. There were, more than likely, additional reasons for their departure as it is common for high-need schools to suffer with high teacher turnover rates. However, the influence of peers is also an important factor.

Some teachers at the school have chosen to mix elements of traditional practices with New Tech practices. Mr. Marshall explains his reasons for this:

Colleges are not doing New Tech. You don't need the smart board and you're not going to be making these fantastic Prezi presentations in your English 104 class. You're going to be reading three novels and writing a compare and contrast paper ... I'm not sure abandoning everything from the traditional model is really helpful ... I'm not a big fan of technology but I do like it as long as it is only a means to an end and not an end and I think some of the teachers here see it as an end.

Ms. Bolton expressed frustration with teachers who do not fully embrace all the components of the New Tech model, including the technology. She explains,

You can't do the model without the tech. You know you can't do the model with some of the parts missing. You can't say I'm going to create a project and do it New Tech and never workshop ... There's so many of those components that if somebody isn't 100% working toward doing all of it all the time then they're not adhering to the model and as long as we have that division, once again that impacts our culture.

Ms. Bolton's statement makes a connection between school culture and the implementation of the New Tech model, saying that it is confusing for students when some teachers are following the model and some are not. She also shared her very strong opinions on the use of technology as an integral component of the model:

Technology is key. If you are uncomfortable with the changes that are happening in the world of technology, then you're ultimately not going to do the [New Tech] process right. You're not going to attack this program with fidelity ... As somebody who has absolutely come to love this, I can't stand to see it bastardised.

The passages above illustrate some of the tensions that relate to the implementation of the New Tech model and the use of ICTs at Midwest New Tech. There is a definite gap, at this point in time, between the ideal goals and methods outlined in the New Tech Network school success rubric, discussed in chapter 4, and actual teacher practice in some instances. These reasons vary among facilitators and illustrate Cuban's (2007) insightful ideas on how schools shape reforms, with some teachers creating "pedagogical hybrids" of reforms.

Team teaching

I observed various degrees of collaboration among team teachers during my time at Midwest New Tech. I asked Ms. Bolton how team teaching should work. She explained that content is:

a 50/50 partnership no matter what. I've told facilitators it's not even me getting my chocolate in your peanut butter. If we're doing it well enough we should have chocobutter. You shouldn't see any chocolate. You shouldn't see any peanut butter. It should be this new coloured thing that is so well blended and that's non-negotiable.

However, some teaching partners are not combining content. I spoke with Ms. Lyon and Mr. Howard, science team teachers who believe that their subjects are too different and can't be merged. In this case, these teachers create their own individual projects and teach the ones they create while the other teacher functions as an assistant during the session. They take turns doing this. They seem to get along well and I think they would work together on projects if they felt their subjects were compatible or if they understood how they might be compatible.

Beyond the issue of content, real challenges exist for individuals who just did not seem to get along. I asked Ms. Marks to talk about partnerships and she reveals some of the challenges:

The partnering and the marriage of two teachers is a great concept. But it has to be a wanted something – not a forced issue but I want it and I appreciate that person and it has to be open communication and in a lot of teaching marriages it's not that ... You have those pairs where it's just 'I don't want to share my space.'

Ms. Marks refers to the teaching partnership as a marriage. This is not only her description but this is how the relationship is viewed within New Tech schools generally. This was also how it was described at Pacific Coast High. Ms. Gibson, the Principal of Midwest High explains it this way,

It's not a co-teacher, assistant teacher, it's truly team teaching. It's a marriage and sometimes in marriages there are arguments and dysfunctionality that you have to deal with so we just have to address that so they [teachers] do a marriage contract ... It's part of the model.

She went on to explain that the team teachers develop the contract together at the beginning of the school year and decide how they will handle issues of disagreement and they decide on their responsibilities and expectations for classroom norms. There are steps for them to follow if there are problems they cannot resolve.

Ms. Marks shared that her team teacher does not seem to want to work together and does not share or discuss her plans for student work. However, when I spoke with Ms. Sanders, her team teacher, she expressed the same feelings about Ms. Marks. The conflict between the two teachers created a very awkward situation. I observed one of their classes in which Ms. Marks was teaching and Ms. Sanders seemed to be acting as the disciplinarian, walking around the room telling students to "be quiet," "stop chewing gum," "get off Facebook." The second time I observed, students were seated and conversing with one another for approximately 10 minutes. Ms. Sanders was at her desk and Ms. Marks was working on a problem with the computer. Ms. Sanders did ask Ms. Marks if she needed any help and her

reply was, 'No.' The class session finally started but you could cut the tension in the room with a knife. School administrators have allowed these partners to split their classes and students will rotate from one teacher to the other.

I observed other issues related to team teaching. In some cases, there seemed to be an imbalance of power in the relationship. Ms. Rowan specified at one of the professional development sessions that there are no lead teachers, only team teachers. Even so, from my observations, it often seemed as if one in the partnership functioned as the lead teacher, with that person taking the lead role in facilitating the class. It was also evident that within some of the partnerships one teacher functioned as the tech expert and the other was usually not as tech savvy. For example, Mr. Becker explains,

I'm a relative novice at it [using technology]. I have taken Ms. Brown's lead quite a bit. Every time she turns around, she's talking about Turnitin.com and interactive test banks on Study Island. These were all new to me. Google Docs you know they're wonderful tools but I'm a novice at them.

There were times when I asked questions about technology use while I was observing in the classroom and in several instances, one team teacher would refer me to his or her partner for an answer.

The majority of team teachers that I observed appeared to have a great deal of respect for each other and spent time planning projects together and sharing ideas with each other and were also able to combine their subjects.

In addition to teachers working collaboratively with each other, they are also expected to use digital tools to support the teaching and learning process. The next section examines how these tools are utilised in the education process.

Staff experiences and views on the use of ICTs

I observed several examples of the use of technology supporting project-based learning. For example, the Biology/Health class I observed was working on the project that I mentioned earlier, titled “DNA in the courtroom. I spoke with Mr. Loch, one of the teachers for the class. By incorporating the use of ICTs, he was able to extend the relevancy of the project. My interview with Mr. Loch reveals how social media sites afford students a way to present socially meaningful projects to a wide audience.

Facebook’s a very popular thing for adults and students. But children of a young age tend not to use it as maturely as we’d like them to. That and Twitter they don’t seem to understand how they can use that in a positive and powerful way, so if we can teach them about DNA at the same time as we’re teaching them about moral and social justice, i.e. people being wrongly convicted and what happens to them and what happens to their social life and ... at the same time that we’re making them aware of social media – Facebook and Twitter and how you use that to raise awareness and how you can use it as a powerful tool and not just a ‘he said she said’ or ‘what happened last weekend’ kind of thing. I feel like now we’re hitting multiple steps at one time and they’re learning things even beyond what they realise they’re learning.

The “DNA in the courtroom” project demonstrates how the role of teacher as facilitator shapes the use of ICTs, as the affordances are recognised by the facilitator as being useful to enhance student participation and share what is learned with a wider audience. In turn, the use of ICTs shapes the role of the facilitator by mediating and enhancing the teaching and learning process. For example, Mr. Loch talked about using “Khan Academy or YouTube” as alternatives to lecturing and to get students “to see it [the topic] from a lot of different perspectives.”

The use of the digital tools provides Mr. Loch with a variety of ways to provide content for students in a non-traditional manner. One way in which ICTs shape the facilitator role is in their affordances, allowing the facilitator to extend

beyond the textbook to provide a range of resources for students that may better suit their individual needs.

The development of Echo was born out of a need to address some of the social aspects of education. The former Senior Director of School Design and Implementation of the New Tech Network explained that Echo developed out of a need to facilitate PBL. The goal was to build a repository to facilitate PBL, store grades and create a product that allows for sharing and communication across the New Tech Network. He described Echo as, “much more social, with collaboration tools, space to share documents and a gradebook built in. It repositions instruction to focus on social aspects.”

Here we see how particular New Tech values like sharing and collaboration prompted and shaped the development of the learning management system. Echo is accessed every day by teachers and students at the school. Students access their daily agendas for each class and the details for each project, as well as corresponding readings and assignments through Echo. Social aspects of Echo include a “share stuff” section with space for students to share comments, documents, images or videos with the class. There is also a discussion section so that the teacher can post comments and questions for discussion with students in their classes. These discussions are not always academic. For example, the day before the 2012 Thanksgiving holiday, Ms. Bolton posted what she was most thankful for and asked her students to tell her what they were thankful for. In many of the responses, students mentioned that they were thankful for some of their teachers.

Ms. Marks describes what she likes about Echo, saying there are some similarities to Facebook. She mentions that it allows students to make comments

and share with each other but she is able to monitor the comments. She stated, “You can see what their feelings are and what their thoughts are outside of what they actually say in the classroom.” Students can and do communicate with teachers directly through Echo. She also appreciates the “Kudos” section of Echo, which allows teachers to compliment students in an online forum.

The New Tech Network emphasises the importance of relationship-building and some teachers, like Ms. Bolton, use Echo and other online tools to build relationships with students. Her students can contact her through Echo, Facebook, and Twitter and they also have a phone number where they can reach her if needed. On the issue of relationships, Ms. Rowan explains,

What we’re trying to do is create a professional family culture. We are really working on our relationships with the students so that they can build trust with us. But at the same time we want to teach them the professional skills necessary to be out in the workforce. But not teach them that through punishing them – teach them through our relationships with them. However, that’s a shift from where we used to be as a traditional school.

Echo is also used to collect student data. For example, students complete surveys on the platform. Each year there is one focused on school culture and students provide suggestions on how to improve the school culture. This is one way of working to give students a voice on school-related issues.

The use of Echo facilitates the collaborative school culture, as it provides a digital environment for communication and sharing between New Tech members. This sharing occurs between teachers and students in individual schools as well as throughout the New Tech Network. It is also meant to create greater transparency for parents as they can access Echo to view student assignments and a detailed report of student performance.

There are many benefits to using ICTs for teaching and learning. However, there are also expected and unexpected challenges. In a discussion with Ms. Rowan about parent concerns and the challenges for students using ICTs in the classroom, she stated,

It's a huge challenge ... I mean daily you heard "my kid was on Facebook" "I saw them post on Facebook." And we can't catch them all the time ... And it's not that we even want to catch them all the time ... Because we want to build that trust...Part of our philosophy is not that students won't abuse technology, it's what are we going to do when they do and how are we going to teach them to do something differently.

At Midwest New Tech, websites like Facebook and YouTube are not blocked but are available for student use. The cultural ideals of trust, responsibility and professional behaviour, as described in the New Tech success rubric, seem to guide the policies regarding the use of websites like Facebook and YouTube. The cultural approach of New Tech is not to ban these sites, but to teach students how to use them appropriately. These cultural characteristics of New Tech contrast with more traditional high schools that use filters to block a host of websites, including social networking sites, which may possibly be used for educational purposes.

I spoke with additional staff members about the use of ICTs and they expressed a range of beliefs about their value and use for teaching and learning. Some were very enthusiastic and said they were always looking for new digital tools to enhance learning. Others believed that some of their colleagues had abandoned all things traditional and used ICTs to excess. Some expressed concerns that students, and some facilitators, no longer saw the need to use bound books as tools for teaching and learning. Ms. Lyons explained that on days when books are to be used, students complain saying, 'This is not New Tech.' I had the opportunity to observe several of her classes and in one session, students were required to do a

hands-on activity without the use of laptops. The lesson was about chemical formulas and the activity involved using beans to create models. It was obvious that students were disappointed. One student commented sarcastically, “From laptops to beans.” Ms. Lyons feels that there needs to be a balance between laptops and books because when students leave high school, they will need to use both. She further explains her views on the use of books and digital tools:

If someone has written a textbook that the State Department of Education has recommended for all their schools, then that author has definitely collected and condensed relevant information and you would do better to go through that, get [some] ideas and [if] you want to take it up a notch, then go onto the Internet and research and then back this up. But to say that just because we’re New Tech we never look at books, I don’t buy it.

Other facilitators have the same concerns about the cultural shift away from books. Mr. Becker stated,

Even though we have the Internet at our avail, I think we’ve almost taken a ‘books are bad – Internet is good’ [attitude] ... I don’t think one or the other should be the dominant force ... we’re using it [technology] too much. We might not have been using it [technology] enough before. I think we’re using it too much now.

Ms. Avery is concerned about students’ lack of understanding of the research process. She compared her experience at a previous school, where there were relatively few student projects that involved the use of technology, with her current experience at Midwest New Tech:

You come here ... and it’s all technology. I mean a book - what’s a book? What do we do with that? ... I almost think that there’s a happy medium somewhere in there because I think honestly that research is almost like using a calculator. You should learn your basic mathematical functions first and how to do them yourself, then you can use a calculator if you want or need to.

Students are sometimes required to use Facebook as some teachers incorporate it into their projects. Ms. Brown admits that she wishes teachers and

students could go back to research with books, newspapers and microfiche but she goes on to say,

Our previous project had [students] create a Facebook page because they're on it anyway. Not only that, but it's become so important in the world ... Every news company has Facebook – follow us on Facebook and Twitter. Every store has 'like us on Facebook' and get coupons and stuff like that so everybody's pushing it into our lives ... it's hard to keep them [students] away from it.

Ms. Brown and Mr. Becker recently completed a project titled "Pick Me! Pick Me!" The driving question for the project was "How can creating and running a political campaign help you better understand the workings of our government?" This project coincided with the U.S. Presidential election.

Student groups were required to create their own political parties and form positions on social and political issues. Students were selected to run for various offices (President, Senator, Congressman/woman, Governor and Mayor). Other students functioned as campaign managers and public relations managers for the campaigns. The campaign managers were responsible for creating websites and Facebook pages for their campaigns. They also had the option of connecting it to a Twitter page. There was even a contest to see which campaign could get the most "likes" on Facebook and at least one student went to one of her former teachers, Ms. Bolton, and asked her to post the Facebook link on her Echo agenda page so students in all of this teacher's classes could "like" the page. Her Facebook page received 146 "likes."

The use of Facebook for Ms. Brown's project worked well. However, a theme that emerged from teacher and student interviews was a concern about students' inappropriate use of technology. Ms. Anderson, the Drama teacher, explained that students had recently recorded a school fight and then posted it on Facebook. This

fight was then viewed online by students and talked about during the school day. Ms. Burke also spoke about fights occurring between students over comments left on Facebook. It is one thing for a group of students to witness a fight in real time and talk about it but quite another to replay it again and again online, drawing in an even wider audience, and continually commenting on it during school time. One of the unintended consequences of using social media sites is the ability to continue to view the digital version of a fight and leave a digital trail of comments that may incite further violence long after the original fight has ended.

There are other challenges that accompany the use of social media at the school. Many students spend too much class time on Facebook, YouTube, and Twitter. One teacher referred to it as an addiction and even joked about allowing students to “get their taste” at the beginning of class. He hoped that if they could quickly check their Facebook pages at the beginning of class, then they would be able to focus on their assignments. As discussed in chapter 5, a similar strategy was used by Ms. Tod at Pacific Coast High to minimise distractions caused by mobile phones.

The school projects discussed in this section demonstrate how ICTs can be used to enhance participatory learning and extend the real-world relevance of a project. Additionally, both of the projects discussed thus far in this chapter, “DNA in the courtroom,” and “Pick Me! Pick Me!” demonstrate the affordances of ICTs to engage a wider audience in the learning process. However, Midwest New Tech faces several challenges related to the use of ICTs. There is resistance from teachers, some of which may be linked to their beliefs about the place of ICTs in the education process. Additionally, the widespread inappropriate use of technology, which includes social media sites, as a distraction is a huge problem. These problems may

be attributable to the lack of a well-developed New Tech school culture and value system of the sort I observed at Pacific Coast High.

Teacher roles in the process of enculturation for students

As illustrated in chapter 5, teachers play a significant role in the enculturation process for students. Teachers aid this process in the ways that they group students for class projects. For example, Mr. Marshall selects students based on their work ethic. He rates his students by number, with 1 being the “most motivated” and 3 being those who are the least motivated. His rationale is,

You don’t want to put a 1 with four 3s. Because the four 3s are going to sit back and slap each other while the 1s are doing the work. You want to put maybe two 1s with a 2 and a 3 or something like that [together] and a lot of times the three will gang up on the one who is not doing any work. It’s much less pleasant [for the unmotivated student] so they’re like, ‘Fine I’ll do it.’

In this way, the teacher is involved in the enculturation process by selecting group members that he or she believes are best suited to activate the peer-to-peer support process, with students supporting and sometimes pushing each other to work. Some teachers are still learning how to group students and it can be complicated. For example, Mr. Thompson has had difficulties with students holding each other accountable for doing the agreed upon portion of a project. Even though students complete pre-project contracts, they won’t complain or initiate procedures to fire a group member who is not working. There are cases where one student will take charge and make sure everything is done, which is problematic. So he and his teaching partner, Mr. Johnson, have taken measures to avoid this with their next project, which will have several individual components. Only the product, a game students design, will be a group effort. His comments about the upcoming project

are, “we’ve got this one designed so it upsets the floaters [those who do not contribute to the project].”

Mr. Johnson echoes his concerns about students not wanting to fire anyone, although he shared one possible reason for this behaviour.

They would rather even take a lower grade and not expose somebody who is not doing the work. I hear there are some threats [like], ‘you’re in my group and you think I’m going to do something to you’ and ‘you’re not firing me no matter what I do.’ That’s hearsay though. But some of the people involved, I can believe it. It could be perception too. It’s not necessarily true. They just feel like, ‘Oh I better not fire that guy or there’ll be repercussions.’ But I think we’re getting better. It’s the third year and facilitators are getting better. The kids are getting better. They’re starting to understand the process.

Bullying is a serious issue and efforts will need to be made to determine if it is happening and how to effectively deal with it. This is an example of a complication that hinders the peer-to-peer influence in the enculturation process. At Midwest High, the New Tech value system has not been sufficiently internalised by students for them to fully accept their responsibility as a group member and hold each other accountable when necessary. This does happen to some extent at Midwest, but not to the extent that it is the norm, as is the case at Pacific Coast. This is partly due to the administrative power struggles when the model was first introduced. This hindered some teachers from using the model and sent mixed messages to students. It is also a symptom of the social conditions within the school neighbourhood. This situation illustrates how a particular school context shapes how reforms are implemented.

The process of implementing the model may, however, become easier in the future, as the middle school in the district has also become a New Tech school. Students entering Midwest High in the near future will already be familiar with the New Tech education approach.

Ms. Bolton and Ms. Cannon provided an excellent example of the role teachers play in the enculturation process for students, more specifically in the development of the New Tech values of trust and responsibility. I had the privilege of observing a student-led parent conference as well as the preparation process for the event. The observation below describes how students were guided through the process of becoming responsible for taking the lead in explaining their progress to their parents.

In preparation for the conference, Ms. Bolton explains to students that this is their time to talk to their parents or guardians about what they have been doing in school. Each of their subject-area teachers will provide them with talking points to address with their parents. Ms. Bolton is enthusiastic and asks students to think about anything they would like to show their parents during the conferences. She explains that they will put packets together with all the necessary information they will need to discuss.

She asks students how many of them would like their parents to see them as more responsible. Hands go up and she explains that this is their opportunity to accomplish this. There is a discussion about talking points, which includes grades, attendance, standardised test reports and student goal setting. Ms. Bolton suggests that students also talk about their reading level with parents and how their love or hate of reading has impacted their score. In addition, students are asked to talk to parents about why their grades are the way they are and to explain how many credits they have and what that means in terms of them being on track to graduate. She stresses that there are things that they can brag about to their parents. She looks at one student and asks, "Isn't that right?" He replies, "I don't know. I guess."

Ms. Bolton helps him out by telling him that his reading level is something to brag about and that he reads at the college level.

Students are responsible for scheduling an appointment for their parents and Ms. Bolton suggests they text her when they have confirmed a time with their parents. She then meets with students in small groups of about eight or nine to have discussions about the conference. She sets a positive tone in each group and again emphasises that *they* will run the conference with their parents, so they get to set the tone and also explain the next steps for how they are going to improve their grades if needed. She lets students know that their other teachers will be present to answer any questions that arise but she again emphasises that they are responsible for running their own conference.

One important thing that students need to let parents know is that if they have any grades of “D” (close to failing) or “F” (failing), they are required to attend a flextime session during the school day or after-school sessions to improve their grades. She explains that this is not something they can opt out of. Parents will need to sign a contract indicating that they understand the policy. Parents will also be asked to submit a feedback form to assess how well their child has run the conference.

The next day in class there are a variety of documents on the desks in the front of the classroom that Ms. Bolton and Ms. Cannon have organised for students to begin putting together their conference packets. She has included a “talking points” sheet to help students prepare. Mrs. Bolton calls students up in small groups. They were supposed to have scheduled a time for their parents to attend the conference. Those who completed that task receive candy from a Halloween bucket that is passed around. She reiterates that the conference is not an option and

that everyone must set an appointment and that they are in control of the situation. She lets them know that she will be at school at 6:30 a.m. for parents who need to schedule an early appointment. Ms. Bolton calls on each student who has not scheduled a conference and has them call their parents right then and there, either on their mobile phone or on the phone in the classroom, to nail down an appointment.

After students have prepared their packets, their task is to write out their talking points on the talking points sheet. I heard two students discussing theirs. One is excited and says she is going to write that her reading score is really high. She tells the male student next to her that his reading level is high also and that he should talk about it. These two have previously told me that they are in competition with each other for the highest scores. She earned straight "As" last year and he came close. Another student says that she will need to explain to her parents why she has more grades than classes. She is referring to combined classes like English/Sociology in which students still receive a grade for each subject.

As I walk around the room, I observe most students on task, looking through their folders at their documents or writing out their talking points. Ms. Bolton notices a couple of students on computers and tells them they are not to be on the computer or collaborating about anything. She has them move to a table away from the computers so that they can concentrate on their talking points. She notices one student with his iPad out and he is not working on the assignment. She takes the iPad away and tells him to get the talking points done. He starts to say he wasn't even using it. But before he can get the words out of his mouth, she tells him she will give it back once his talking points are done. He does not look happy about it

but does not say anything back. Ms. Bolton plans to ensure that each student is ready for this conference and she will not let anyone evade the process.

One particular teacher in the school did not seem to understand the point of student-led conferences or how to fully involve the students. I spoke with him while his teaching partner was teaching the class and he was at his desk collating conference files for each student. He explained that he thought all the shuffling of paper was a waste of time and that parents could just log into Echo to check student's progress. He expressed doubts that many parents would actually attend the conference and had a very negative attitude toward preparing for it. It would be easy to pass judgment on him and I was a bit frustrated to hear his comments after having watched Ms. Bolton's efforts. However, it is not clear what kinds of discussions went on between teachers in his year group as they planned for the conference. It may also be that he needs more time to better understand New Tech values and how to infuse them into the education process. However, from my conversations with him, I got the impression that he was just overwhelmed with the tremendous workload at the school.

Conference day has arrived and I watch students sit down like adults with their parents to discuss their grades, although some are better at it than others. Jan is speaking with her mother about the grades on her report card and she says that she is doing well. She explains that she has a score of 89% in her science class but that she has just taken a quiz and learned from her teacher that her grade in the class has increased to an "A." There is a ranking sheet in the packet that indicates she is ranked 14 out of 151 2nd year Midwest high school students. She proceeds to discuss the number of credits she has and how many she needs to graduate. She tells her mother that she is on track to graduate on time. Her mother asks her if

there is any chance she might graduate early and she replies that it might be possible or she could use any extra hours to work as a teaching assistant in the school or work an outside job. She proceeds to show her mother graphs for students in the district explaining how she is doing compared to those students. She explains that her reading score was nine points below the goal she set because she's not good at reading. Her mom asks her if this means she needs to read more and stop playing so many video games. She replies, "I don't play video games" and her mom responds, "Well you're doing something on the computer or watching TV." Her mom suggests that she should read until 1:00 a.m. instead of talking to her boyfriend on the phone. The student turns to me and smiles and gives a slight sigh before proceeding to show her mother the contract that explains flextime and the afterschool program for students who are in danger of failing any of their classes. Her mother is happy to know that her daughter is doing well and she signs the contract and fills out the feedback form.

Other students are busy speaking with their parents and Ms. Bolton and the other teachers of 10th grade students walk around to answer any questions students or parents have. At one point, Ms. Bolton notices that a student has just handed the conference packet to his mother and he is just sitting there quietly while she looks through it. Ms. Bolton tells him to sit closer to his mother and reminds him that he is running the conference. She then takes the folder from the mother, gives it back to the student and instructs him to explain the contents to his mother. He finally starts the conversation.

These conferences were not only about updating parents on student progress. They provided an opportunity for students to exemplify central New Tech values of responsibility and trust. Students were required to collate their own

progress data and understand it in order to explain it to parents. Their actions demonstrated responsibility, while teachers simultaneously trusted and guided, or in one case pushed, students to be responsible. These examples show how New Tech students are expected not only to know the New Tech cultural values but also to enact them in interpersonal interactions, and thus internalise the values at a deeper level.

Thus far I have discussed several of the sociocultural elements that shape the implementation of the New Tech model at Midwest High. I have discussed teacher experiences of working within the model as well as the enculturation process that occurs as part of the transition. Additionally, I have explored many of the challenges teachers face as a result of adopting the model and from other social and political forces like poverty and federal and state mandates for measures of success. These influences impact how teachers perform their jobs and how they see themselves as teachers.

The next section of this chapter focuses on student experiences, specifically their feelings about being a student at Midwest High, their successes and challenges, their experiences of the enculturation process, and issues arising from the extensive use of ICTs. Also discussed are their reactions to school efforts to allow more freedoms and privileges for students.

6.3 Student Experiences

Being a student at Midwest New Tech

In the 2013 New Tech Network school culture survey in which 77% of Midwest High students (395 out of 512) responded, 17% strongly disagreed that their school experience was positive; 11% disagreed; 34% neither agreed nor disagreed; 31% agreed that their school experience was positive; and 7% strongly

agreed. In summary, 28% of respondents indicated that they would not rate their experience as positive, 34% were neutral, and 38% of respondents rated their school experience as positive.

These results are quite different from those at Pacific Coast, which indicated a very high percentage (70%) of students rating their experience as positive. The figures at Midwest seem to indicate a high rate of uncertainty or possibly a mix of emotions, as was expressed by the students I interviewed. Many expressed positive feelings for some aspects but also spoke about the challenges related to collaborative group work and the transgression of school values when it comes to the use of ICTs.

Several students, particularly seniors, discussed how hard their teachers work and that teachers care very much about them. Mark, a pleasant, mild-mannered senior student, made reference to the many New Tech workshops that teachers attend and he feels that they work hard to make projects interesting. He described the school as having “a homey feeling.” I asked him how teachers show their care for students and he replied, “They’ll just tell us, ‘You know we care. We are here for you’.” He also talked about teachers doing things like calling home to let parents know when they have done something good and that teachers are always available “during lunch to do remediation, tutoring, make-up work, retesting.” He described this as being “really cool.”

Donna, another senior student, echoes Mark’s feelings about the teachers and appreciates the relationships she has with them. She states,

I like that the teachers - you can have like a personal relationship out of the classroom and you can talk to them about anything and they’ll kid around with you. I like that a lot about this school. They care a lot about how you’re doing in class but not just in class but [also] out of class. That’s what I like the most.

Donna specifically mentions Ms. Bolton, whom she wasn't very fond of when she first started attending the school because Ms. Bolton's assignments were quite difficult. However, by her sophomore year, she became accustomed to Ms. Bolton's high expectations and began to appreciate her. Donna's view now is that, "[Ms. Bolton's] projects are hard. But you can tell she's trying to challenge us to see what we can't do and what we can do." Donna also appreciates being able to contact Ms. Bolton online or by phone for help if needed.

Luke, also a senior student, enjoys writing and has an internship with a local newspaper. He expressed his appreciation for the teachers, saying that they respect and care about students. He specifically mentions Mr. Becker and the long hours he spends at school, arriving before 7:00 a.m. and remaining some evenings until 5:00 or 6:00 p.m. to grade papers or help students.

Jasmine, a freshmen student, talked about the differences between her experiences with New Tech teachers and her experiences with teachers at a previous school.

Actually my experience here has been really good. Most of my experiences here involve teachers because sometimes in the past my teachers haven't always been the best towards their students ... I've gained more respect towards my teachers ... because they gave me the respect I give them.

The care and respect that several teachers have for students was obvious to me, particularly in two of the classes I observed. In the combined English and Sociology class that Donna referred to, it was not unusual to hear both Ms. Bolton and Ms. Cannon tell students that they love them and want them to succeed. Tough love was also shown, as there were times when the teachers needed to sharply raise their voices to get students to focus. I watched Ms. Bolton spend the majority of her time during the school day, including her lunch break, working to help students.

When she wasn't working with students, she was working with teachers to help them create projects or provide guidance on the use of technology. We spoke often and I never heard her complain about the long hours she spends at school, even though there were days when she remained in the building well into the night.

In the Biology/Health class, I observed Mr. Loch having a mini-conference with individual students about their grades on a particular quiz. He spoke with them about the questions they answered incorrectly and gave them suggestions on how to improve for an upcoming test. His words were extremely encouraging and supportive. Additionally, as mentioned earlier in this chapter, I was aware of three staff members who went above and beyond the call of duty by taking students, who were facing homelessness and other challenges, into their own homes to live with them.

The interactions discussed above demonstrate the diligence and dedication of teachers to their students. Positive relationships are essential to the development of a New Tech culture. It is particularly important in this school, as it seems there are a large number of students who may not have strong familial support.

Experiences of enculturation and transition to the New Tech model

The enculturation process for students proceeds through interaction with their teachers and their peers. They participate in culture-building games, collaborate on projects, and learn to work through issues that arise during the collaborative PBL process. Carmen, a sophomore, explains how games are used at the beginning of the school year.

I work better alone but the first couple of days they get you introduced to working with groups. The first three days you play group games together on the football field and they just kind of get you used to working in groups.

These games are part of an effort to build relationships, develop a collaborative culture and encourage students to support each other. “Culture-building days” occur throughout the school year at Midwest New Tech. I had an opportunity to observe students participating in games at the beginning of the school year. Students were encouraged to sign up for the games of their choice but were not required to participate. Games were conducted in the gym on the football field. Those who did not play watched from the stands cheering for their favourite teams. Ten games were planned: That’s a Wrap; Feed the Elephant; Mindfield; Pick up Sticks; King Tut; Beach Ball; Gutter Ball; Hole in One; Take the Plunge; and Tire Roll. The object of “That’s a Wrap” was to have two students work collaboratively to wrap a box with one student’s arm around the other student’s waist, leaving each student with only one hand to work with. The pair must then move quickly to deposit the wrapped package into a gift sack. The team with the best-wrapped package wins. The “Feed the Elephant” game involved students wearing elephant trunks (made with dryer tubes and wooden sticks for directing the trunk). The goal was to catch as many peanuts as possible in their trunks. Through these games, cultural values like collaboration and teamwork are enacted by students.

Several students spoke with me about the culture shift, particularly the change from a more direct teaching approach to a facilitative approach and also the change from mostly individual work to group work. Some of the younger students expressed frustration with the facilitative teaching methods. It seemed that many of them were accustomed to a more direct style of teaching. For example, Shawn, a student who is off-task quite frequently, complained that teachers don’t explain the work. He says teachers, “Just tell us, ‘Get on the computer, look on Echo, there’s

your assignment.” His friend, a student named Angela who is also frequently off-task, echoed his sentiments saying,

They just tell us, ‘Oh your assignment is on Echo.’ And if you ask them a question, they’ll make you read the Echo thing and then if you still don’t understand then you’re supposed to go ask like three students and then go back to the teacher and I just think that it’d be easier if they just told us or helped us in the first place instead of going and asking three students then the teacher.

There were others who also experienced difficulties. Jennifer, a sophomore student who is focused and hard working, shared that her group had “so many things to do. We don’t know what to do” for this project. This was shared during a session on research methods I conducted for small groups of students. She was looking to me for an answer and there were several thoughts racing through my mind at the time.

I tried to tailor my response to Jennifer as a New Tech teacher might respond. I asked her a series of questions to help her think about how she might proceed. I also shared some of my own experiences as a grad student, explaining that there are times when I’m not sure what to do but those are the times when I knock on doors, reach out to others with questions or do some research to try and figure it out. I considered this response carefully, as I did not want to unwittingly undermine the goals of Ms. Bolton and Ms. Cannon by adopting a more directive approach to help students. In the end, Jennifer and her group worked through the process and successfully completed their project.

Beth, a senior student, was nervous prior to her first experience of group work. She had lots of concerns wondering, “Are we all going to get along? Are we all going to do a part? Are we going to have this finished? Are we going to meet their [teacher’s] expectations?” However, after the first year she recognised that she was

making lots of friends and she felt more comfortable presenting in front of people. She explains, "Before, I was so scared and nervous. I never wanted to do that [talk in front of people]." Now she enjoys PBL and sees it as "fun." While speaking with me about PBL, she made reference to the "Pick me, pick me" project in her combined English and U.S. Government class, where students formed their own political parties, ran for office and participated in debates. She explains,

It's better learning because we get really into it like the last project for Ms. Brown's class. It was fun to be a politician, to play the roles, to knock out your competition and find ways to make your party look better than other parties ... just like getting really creative with it but still learning and applying the content. I like learning that way because it's more of like hands on and I'm better at hands on and visual learning than doing stuff by myself. I prefer working with others now than working by myself.

Mark, a senior, describes himself as "very soft spoken and quiet." It was challenging for him to interact with others in groups. But he no longer sees it as a challenge.

In this type of school, you can't be quiet. You can't be a loner. You have to talk and communicate with others and voice your opinions and have a say in some of the things that you do.

His transformation from quiet loner to active participant has had an impact on his classmates. He explains,

I'm kind of like a top person to a lot of people, so a lot of people say I want Mark in my group. Then when we get a group they say we want Mark to be the leader. So I feel like a lot of people look up to me and they feel like I am a good speaker and that I'm a hard worker and that they would be comfortable working with me in a group.

His impact on his classmates has also helped him to realise his leadership potential. He explains,

It makes me feel good inside. It makes me feel like I've touched someone or I've been able to be a role model or like someone can look up to like, 'Well he does his work so let's go with him and he can teach us things ... It makes me feel like I am a leader and that I should not

have been as quiet and soft spoken in the beginning because I didn't know I was capable of being a leader and a role model.

Certainly, one of the goals of group work is to help each member develop and realise his or her potential. Another goal is to enhance the knowledge and achievements of the entire group.

Jasmine, a freshman, discusses her transition to group work and the personal benefits of it:

I'm more of a leader than a follower, so you know it's been pretty rough for me trying to get used to groups but I'm getting used to them now and one of my facilitators said that I was improving in trying to work with groups. I realise my improvement because if I was younger and if I was working in a group with someone, I wouldn't be able to cooperate but I cooperate and I've made myself a better person by helping some people out and working in a group.

Collaborative group work, for these students, has been a positive experience and each of them recognises how the experiences have allowed them to grow, take on challenges, and influence the lives of their peers by helping them to develop as responsible students. This is in stark contrast to American cultural norms of competition and individualism and the typical pattern of students working exclusively on individual assignments. However, as we saw at Pacific Coast, this process is not without tensions. Several students spoke with me about some of the challenges of collaborative group work.

Jack, a sophomore student, enjoys working in groups but tells me if one member is absent, the group is responsible for getting them "back on track" or getting their work to school. I had an opportunity to observe Jack and two other students when Ms. Cannon told them that the poster they created as part of their project needed more work. It was Friday and the projects needed to be ready the following Monday. I listened as the group of three boys discussed ideas and decided

to meet at Jack's house on Sunday to rework the poster. All of the group members for this project participated and got the project completed. However, group dynamics can sometimes be problematic. For example, Donna expressed difficulties adjusting to group work.

I think the hardest adjustment was doing project after project after project and being in groups because you know how in like a non-New Tech [school], you're just doing worksheets and bookwork. We just changed from that and I think that was hard because of course when you're in a group, if you're assigned groups, you're going to work with people you don't get along with.

It is inevitable that conflicts will arise in groups. There are issues with students not getting along and also issues around trying to work with "slackers" (a term used by students). Mavis, a sophomore student, explains why her grades dropped when she started working in groups.

I'm not a very patient person and I like things being done right and ... the first time I was in groups I had to do everything. Well actually the first group I had was pretty good because it was with all of my friends, all of the smart people. But then as I went on, because my teachers knew I was smart, they were putting me with the slackers and seeing if I could change them.

She continued, telling me about one group where two of the members said they had completed their tasks for a project but actually had not. She complained saying, "I practically did everything. But the things I did assign to people never got finished." Mavis has learned how to better deal with these issues. She now employs certain techniques when dealing with slackers. She gives them three warnings. If that does not work, she assigns them a different project task to see if that makes a difference. If the problem persists, she speaks with the teacher and if necessary, fires the student. However, there are still complications and she explained that there are times when she still winds up doing extra work.

Even though there is a system in place for firing a group member, it is not easy to do so. As discussed in chapter 5, the goal is to work with the offending party and try to figure out how to get them working. Donna talked about her experience with this.

Well we have this thing where if someone is not doing what they're supposed to do we talk to them, see why they're not doing their work, see how we can help them and then if they still don't want to do it then I guess we can fire them from the group. But we tried to do that before but it didn't work. The teacher wanted the person that wasn't cooperating to still be in a group with us. I guess he just wanted us to try again with this person so we tried to talk to her and tried to work with her and it worked and she did her part.

Here we see how teachers try to allow enough opportunity for students to resolve conflicts and for peer influence to motivate students to get their work done before they intervene.

Unfortunately, at this site, some unintended consequences, like bullying, may result if a group member is fired. This is an issue that has caused Mr. Thompson and Mr. Johnson to structure their projects to minimise that possibility. Mark recounts how he and another student had to fire a group member for not pulling their weight. He felt a bit threatened by some students as a result of the firing. He explains,

We were walking out of school and then they told some of their friends that, 'We just got fired from a project and there's the guy right there.' And I was walking out and there was a group of people standing there making little comments and stuff. But I just continued to walk.

The situation did not escalate and Mark still says that he feels safe at the school and he did not feel the need to tell his teachers about the incident. He said his main concern was his grade. However, as mentioned earlier, this is an area that needs to be addressed.

Working with peers who avoid work is a big challenge for students here. However, some students seem to enjoy trying to motivate and help others get their work done. For example, Carmen, a very energetic, focused high-achieving sophomore student explains,

I just kind of help ... I've never been anything other than the project leader ... so with that being said, that means I'm the one who distributes the tasks and the management and everything like that. So with the people that I know that don't like to contribute as much into work, I just ask them what are their strengths [and] their weaknesses? What do you want to do to help do this? Once they hear something they like, they're okay with it and they do it.

She also explained that many of her teachers purposely place her in groups with some students who have problems with work ethic so that she can serve as an example and help them achieve. Many of the students I spoke with understand why they are being grouped with particular students and, as illustrated here and also in chapter 5, part of the enculturation process for students proceeds through a peer-to-peer process. Students are relied upon to help boost the achievement of others as well as to help encourage proper behaviour of peers. Again, this has traditionally been the role and responsibility of the teacher.

Some may ask if it is fair for students to be responsible for holding their peers accountable. The question of fairness depends on one's ideas about education, what it entails and how best to prepare students for life beyond high school. I believe it is fair if parents and students clearly understand the New Tech approach so that they can make an informed decision about attending the school. Parents were aware that the school was transitioning to the model in 2010. However, I am aware of only one parent who decided to send his child to another school and none of the students I interviewed expressed an interest in leaving the school even though there are other choices. Some students had family members who previously

attended, or are currently attending the school so they were familiar with the school. For others, their school choice may have been one of convenience of location and some may have felt that the school was the better choice from among the schools in the area.

Students experience the process of enculturation in many ways, one of which is through actively participating in the creation of projects that include a focus on school norms. For example, one of the school norms is “the appropriate use of technology.” Several students, in the combined English and Sociology class, decided to focus on this norm for a class project titled “Everyone’s a Critic.” I discuss this project and student use of technology in the following section.

Experiences of the Extensive Use of ICTs

The “Everyone’s a Critic” project required students to learn about the perspectives and theories of six early sociologists. Teachers supplied links to selected readings which students accessed on Echo. Students were also encouraged to use the Internet to find additional resources. Students were also required to develop a research question and choose a research method to answer the question. Most students chose to create an online survey because of time constraints. They created surveys using Survey Monkey and then posted them on Echo with a request for students to take the survey. Students needed to create an art project that reflected the answer to their research question and represented one of three sociological theories (functionalism, conflict theory or symbolic interactionism). They then needed to explain how the work relates to one of the school norms. Workshops (focused lessons with small groups of learners) were conducted to help students understand the sociological theories through analysing poems and other

readings. Groups met in class and communicated through Google Docs to work on their projects. I observed student presentations and asked them questions about their final projects. I paid particular attention to those projects with a focus on the appropriate use of technology.

I asked Mavis, a student in this class, why her group decided to focus on the appropriate use of technology. She replied,

We figured the easiest and the one you'd be able to research the most on would be the inappropriate use of technology because we were experiencing a lot of that last year and because people were ripping keys apart, putting gum where the USB cord should go, and it was giving us a lot of problems.

Vandalism has been a problem. Some teachers and students argue that the laptops are cheap and keys break off easily, while others believe students are purposely vandalising them. I suspect it is a bit of both. Some of the vandalism is probably malicious and some may be a real lack of knowledge about how to properly care for the laptops. I believe the later was the case when Ms. Anderson, the Drama teacher, told me about a student who poured a bag of Cheetos, a crunchy cheesy snack, on the keyboard of a laptop and then began eating them from the keyboard. This certainly could damage the laptop and this student was ingesting all manner of germs. Ms. Anderson said she did her best to explain the health issue to him as she quickly tried to get him to remove the snack from the keyboard.

Students being distracted by social media is also a major concern. Mavis and Nicole, both students in the English/Sociology class, said that one disadvantage of attending the school is that students were addicted to, and always on, social media sites like Facebook and Twitter or gaming sites. Nicole feels that the large desktop computers in some classrooms make it even more difficult for teachers to see when students are playing online games or on other sites.

This was certainly the case with Shawn and Angela who often took advantage of the fact that teachers could not always see their activities. Both told me outright lies about the time they spend on the internet while in school. For example, I spoke to them about their use of the internet in school. Shawn told me,

I get on the sites that we're supposed to get on here. I don't get on Facebook, Twitter, Instagram. I don't get on none of that. I try to do my work ... I don't listen to YouTube. I don't do none of that.

His friend Angela told me,

If I'm done with my work and we have like free time on the computers, I'll get on Facebook or listen to music. But I get my work done first.

I repeated their responses and asked if that was what they were telling me. They both replied, "yes." This certainly was not the truth, as I had been sitting behind them and observing their activities for three months. The pair always sat together and spent quite a bit of time on Facebook and YouTube. Whenever a teacher or teaching assistant would catch them, they would lie and say they were not on those sites. They were often able to close the Facebook window before getting caught. During one class session while Ms. Cannon was talking to the entire class, these two were watching body-piercing videos, with the volume muted, on YouTube. I wondered if they lied to me because they were unaware that I was watching them, as I never commented or interfered or spoke with a teacher about their activities. This scenario provides a good example of why interviews paired with participant observations provide a better sense of the on-the-ground realities in schools.

I moved on with other questions during the interview but knew I would eventually ask them more questions during class time when they were actually off-task and on social media sites. I had this opportunity while students were working

in groups and typing in “Knows” and “Need to Knows” for a new project. This activity gives students an opportunity to share what they know and ask questions about what they need to know for a project. The group members were to work on this in Google Docs. I located Shawn and he, as expected, was on Facebook instead of contributing to the group effort. I asked him if he was using technology appropriately. He told me that there was nothing for him to do at this point because one of his group members was working on the Google Doc and deciding on group roles. At the same time he was explaining this to me, he closed his Facebook page. I asked him why he closed it and he just gave a sly grin. I smiled back and he asked one of his group members to put him on the “share list” for the Google Doc and he began working with his group members.

Shawn was always friendly toward me and wanted to know what my life was like in England and about my experiences in school. However, he was quite annoying and rude to his teachers and he spent much of his time online or chatting with classmates. As discussed earlier in this chapter, some of the teachers felt that the New Tech model may not be the best option for some students and I wondered if Shawn might do better in a more traditional setting with more guidance and structure and very limited access to ICTs.

The widespread inappropriate use of technology is a huge challenge at this school and the biggest culprits are social media sites. One group, working on the “Everyone’s a Critic” project, created a cartoon strip that illustrates the problem. I will describe it here in its entirety. In the first frame, a student is shown in a classroom sitting at a computer and the caption reads, “It was just one normal day at school ... and instead of work, Greg decided to get on some sites that he shouldn’t have been on.” The computer screen shows the Facebook home page. The second

frame reads, "So he [the computer] took matters into his own keys!" There is a picture of the computer and the screen reads, "The website you are trying to access is blocked." The third frame reads, "Greg found a way around the block." The computer screen shows the web address line with a +s in bold and the facebook address line with the letter "s" added after the http. The fourth frame reads, "The computer could see everything Greg was doing. He knew Greg should have been getting his work done." This same frame has a backwards drawn picture of a Facebook screen to show that the computer is watching Greg's actions on the other side of the screen. The fifth frame reads, "The computer had no choice but to make a scene" and there is a picture of a student on screen with his hands up and the words "STOP, get off of those sites" across the screen. The last frame reads, "One of Greg's group members realizes Greg wasn't doing his work." There is a picture of a female group member shouting, "GET OFF and do your work!!" Greg is shown standing with a frown on his face.

The art piece depicts the problem of student distraction on Facebook and it also reveals a characteristic of New Tech culture in the way that it illustrates students' responsibility to influence their classmates to do the right thing. Midwest New Tech is still in the process of working to establish the peer-to-peer monitoring system as the norm. However, taking on this responsibility has been difficult for many students.

Many students here have embraced the use of ICTs and, according to Ms. Lyons and Ms. Avery, some have developed a negative attitude toward the use of

bound books. These attitudes are documented in two YouTube videos¹⁸ created by students at Midwest High.

In the first video, the words “Before New Tech” flash across the screen and there is a visual effect which gives the appearance of an old film reel. A male student is seated at a desk with his head propped up with one hand. He is using the other hand to write on paper with what appears to be an antique quill pen. He goes back and forth between writing with the pen and reading a book. The camera then pans across the room, the visual effect is lifted and the view is sharp. The words “Now, this is New Tech!” appear on the screen and we see two students working on computers instead of using books. They both smile and give the thumbs up sign.

The second video had a similar message with one female student asking another why she was reading a book. She grabs the book and throws it across the room exclaiming, “We have computers! We’re New Tech!” She indicates that hard copies of books are no longer needed because they can be accessed online.

Both of these videos, combined with my observations, indicate that some students view textbooks as an “old school” tool for learning and computers as a “new school” or New Tech tool for learning. In the broader social context, there seems to be political support for moving away from the use of textbooks. Former Secretary of Education, Arne Duncan provided his opinion:

Do we want kids walking around with 50-pound backpacks and every book in those backpacks costing 50, 60, 70 dollars and many of them being out of date? Or, do we want students walking around with a mobile device that has much more content than was even imaginable a couple years ago and can be constantly updated? I think it's a very simple choice (Hefling, 2012, n.p.).

¹⁸ Videos not referenced so as not to compromise anonymity.

Some claim that the affordances of digital textbooks include the potential to enhance learning because of the interactivity they provide. They argue that digitised textbooks go far beyond a simple online reproduction of the hardbound copy. U.S. Federal Communications Commission chairman Julius Genachowski, argued that a hardbound textbook doesn't have the same capacity as a digital textbook to allow students to investigate and deepen their understanding of a subject (Hefling, 2012, n.p.).

However, not all students at Midwest New Tech are ready to abandon books and some prefer books to reading text online. For example, Donna explains,

Most of the things we have to read are online. I don't like it. I don't like reading off of the computer. I can't focus like I do on paper or in a book. Like recently we had this assignment. We had to read a six-page story and I'm just like I can't read off of the computer. It's like my eyes they just don't want to focus and it's better for me to read in a book 'cause I'm so used to it or on a piece of paper. I really don't like reading online.

Although reading from the screen is not easy for her, she does her best to manage it. I spoke casually with other students about reading novels online. One student preferred reading online so she does not have to worry about losing a book. Another student had a similar response saying she doesn't have to worry about "messing up" a book. Two others felt that reading from the screen was more comfortable than sitting "hunched over" reading a book while another student prefers reading books but feels reading online is more convenient because she can access the novel on her phone or on another computer outside of school. This informal questioning left me wondering how reading text online affects students' comprehension. This is beyond the scope of this study. However, it is especially crucial in a school where many students have very low reading scores.

In addition to online text, the creation of videos is often central to student projects. I observed students presenting an entertaining self-made video on the topic of chemical bonding in Ms. Lyons' class. They posted the video on YouTube and they portrayed the chemical bonding between atoms by using the metaphor of a dating service. The four students portray the different atoms and they talk about how they found the perfect match and shared an electron with their mate and that the bond between the two of them is "really ionic." To portray the scenario of two hydrogen atoms bonding together, two male students acted the part of the two hydrogen atoms as if they were in a same-sex relationship. They contemplate having a third atom (oxygen) join the relationship because they say they have heard that dihydrogen oxide is "really fun and very ionic!" The video was an example of how students, left to their own creative devices, were able to relate their studies to the real world. It was a bit racy, and, as would be expected, students loved watching it. Student videos in this class were a supplement to what Ms. Lyons referred to as "a more rigorous assignment." She appreciates the creativity of students. However, she feels that they sometimes spend too much time creating presentations and this limits how much chemistry they learn. She tries to keep presentations to a minimum.

Students utilise ICTs extensively and creatively and this use facilitates PBL. However, general behavioural issues extend to the use of ICTs, making collaborative PBL difficult. Also, as at Pacific Coast High, there is no data indicating how many students have computers and reliable internet access at home. Some students spoke about staying after school to use computers and some teachers suggested that students could also visit the public library for access. However, these may not

always be viable options as lack of transportation and long queues for library computers can pose obstacles.

Flextime: New freedoms and privileges

One of the cultural characteristics mentioned by students at Pacific Coast High School is that they have many freedoms and privileges which mirror the workplace. During the 2012/2013 school year, administrators at Midwest tried to implement “flextime.” Flextime is one hour in the middle of the day during which students eat lunch for one half-hour and, during the second half-hour, some are required to go for tutoring. Others can choose to complete class work, homework, get extra help with their studies or use the time to participate in a variety of extracurricular activities offered by teachers to help cultivate teacher-student relationships (e.g. crocheting, guitar time, Nintendo Wii games, yoga). Students can also choose to go into an open classroom, monitored by a teacher, to meet with their peers, talk with teachers or spend time on the internet.

Students were excited about flextime but I, and several teachers, were sceptical about trusting students to behave appropriately. Some staff and administrators were employing the New Tech value of trust by providing this new freedom to students. However, it seemed to me to be a sort of blind trust despite obvious problems with unruly student behaviours. It was clear from day one of its launch that most students were not trustworthy or responsible enough to handle this freedom. There were problems with students roaming the halls, smoking in the restrooms, sneaking off campus for lunch and not attending tutoring sessions. It was simply too much freedom too soon. Teachers who were not offering extracurricular activities were asked to monitor the hallways during this time. A

few times administrators were also present in the hallways. However, problems persisted and students continued to abuse the flextime privilege.

Several teachers complained about the unruly behaviour and wanted to know what administrators were going to do about it. In contrast, Ms. Bolton and Ms. Cannon took matters into their own hands. One of them would stay with students in the classroom while the other would go searching for students who were scheduled to be with them for tutoring. This action demonstrated shared or distributed leadership, which is a part of New Tech culture that involves teacher participation in decision-making and working to solve problems that may have traditionally been the responsibility of school administrators. This solution yielded results for Ms. Bolton and Ms. Canon. However, it seemed that some teachers had more of an influence over student behaviour than others. For example, I witnessed one very timid teacher on several occasions asking students who were in the hallways where they were supposed to be. The students would just ignore her and keep walking. Other teachers felt that they already had too many responsibilities and that this was an issue that administration needed to solve.

Flextime had to be temporarily suspended. The principal made the announcement over the intercom system saying, "With freedom there is responsibility. Recent activities of the majority have led to pulling back the freedom of flextime because the behaviours are out of control." She went on to announce that there would now be 20 minutes for lunch and that students would have the opportunity to earn flextime back when their behaviour showed they could handle it. There were students who were not abusing this privilege and the principal said she would be working with teachers to determine which students were not abusing the system. It was unclear at that time how the situation would be remedied for

those students who handled flextime properly. The principal emphasised that it was the responsibility of students to “get on the students who are abusing it [flextime].”

The suspension of flextime was unfortunate for those who found it helpful. For example, Carmen has a computer at home but her internet connection is slow and she is unable to access Echo there. She used flextime to complete homework and other class assignments. I have seen her working on projects with her classmates during this time. She explained that she is not always able to stay after school to complete assignments so the loss of flextime is problematic. Tanya, a sophomore student who is new to the school, told me that flextime provided her with time to complete homework, “do extra research for other classes and get to know other people, since I’m new here.” Luke used the time to meet with friends that he doesn’t see in class and also to meet with fellow members of a mentoring group called Brother-to-Brother.

It is unclear whether flextime will be reinstated at some point in the future. Midwest New Tech is still in the process of trying to establish a strong peer-to-peer intervention network. It remains to be seen if and how long this will take to develop. The goal is for it to work as it does at Pacific Coast New Tech.

6.4 Chapter Summary

The context at Midwest High is vastly different from the context at Pacific Coast High. There are challenges related to the high rate of poverty among students and underperformance on standardised tests. The school is under tremendous pressure to ensure that test scores continue to increase. Teachers are under a great deal of stress as they try to implement numerous initiatives to improve student performance and implement the New Tech model, which requires a radical change

in school culture and teaching practices. This implementation was seriously hindered due to a bitter division within the administrative ranks early on and this caused strife among staff members. Although the administrative issues have been resolved, the problems of teacher workload remain.

The enculturation process for teachers here is the same as it is for teachers at Pacific Coast. They attend New Tech summer conferences and are supported by a peer-to-peer support network. However, this support network is not nearly as strong as the one at Pacific Coast and teacher turnover rate is high. Newly hired teachers internalise tensions and direct messages from veteran teachers that they will not have a life if they remain employed at the school.

Despite these issues, some teachers are fully implementing the model and progress has been made, with New Tech values recognisable in the actions of some teachers and students. Students recognise and talk about their personal growth as a result of working collaboratively with others and their ability to influence the behaviour of their peers. However, there are major problems with students being off-task and distracted by social media sites. Additionally, some students struggle when teachers take on a more facilitative role and try to guide them rather than directly answer their questions. There are instances when administrators employ the same approach with teachers who ask for help and some teachers, like their students, find this extremely frustrating. Implementing this skilfully is a balancing act, requiring an understanding of the capabilities and limits of the individuals involved so they do not feel alienated.

Another problem at Midwest High is that there are concerns that students might be experiencing bullying, which, among its other negative outcomes, interferes with the process of student collaboration and peer-to-peer behavioural

monitoring. Some teachers have developed strategies that incorporate more individual components and limit collaboration to only certain aspects of class projects. This alteration of the model is not ideal but it is needed to meet the needs of students. Also, it provides a way for students to experience that aspect of the model in small doses with the possibility of adding more collaborative components at a later date if student behaviour improves.

A positive aspect that students talked about frequently was their good relationships with their teachers. They felt that teachers really cared about them. This is a testament to the efforts of the teachers, given that the student population is larger - approximately 650 students, compared to the 400 that is typical of New Tech schools. A smaller population is preferred as it helps to facilitate the development of strong relationships. This is extremely important given that there are a number of students who, for various reasons, lack strong familial support.

Efforts to further develop relationships and provide students with more freedom through initiating the flextime program were not successful. The majority of students were not responsible enough to handle the freedom. There are numerous obstacles that hinder culture change at Midwest High and it remains to be seen whether they can develop the culture to the level that it has been developed at Pacific Coast High. The middle school in the district is now a New Tech school, so students will, ideally, begin to internalise the model and its values before they reach the high school.

The case of Midwest High illustrates the complexities of shaping school culture in the context of a poorly resourced school in an economically depressed area with a high rate of crime and a high level of transient students struggling to

achieve reading scores at their grade level. Issues of social inequality within the Midwest High context will continue to impact the New Tech reform effort.

Chapter 7

The Shaping of School Culture in New Tech Schools: An Ethnographic Analysis

This thesis set out to understand how school culture is shaped by the implementation of the New Tech model at two very different school sites: one in which the model has been well-established for several years and one in which the model was recently adopted. This thesis contributes to a body of work which argues that real reform requires a focused and intentional effort to change the culture of education (Rutter et al., 1979; Deal, 1985; Stoll and Fink, 1989; Fullan and Stiegelbauer, 1991; Hargreaves, 1995; Furlong, 2000; Tondeur, 2009; Deal, 2009; Fullan, 2011).

This research focus on school culture required an understanding of the New Tech cultural value system and how New Tech ideas, practices and values are enacted in schools and, furthermore, how this enactment of New Tech values shapes teaching and learning practices, social interactions and individual behaviours. I employed ethnographic methods with a focus on observing local practices of teaching and learning and understanding the experiences and points of view of participants (teachers, students and, to a limited degree, administrators) through conversations, interviews, and participant observation. This particular approach was appropriate for developing an understanding of how school culture is shaped and maintained in New Tech schools and also for an understanding of the complexities and tensions that arise as a result of the New Tech approach to education.

The New Tech school reform efforts are situated within the cultural, historical, economic and political landscape of the U.S. public education system and these societal forces deeply impact reform efforts. This was the case with both of the schools for this study, with the development of Pacific Coast High tied to the economic needs of the community and Midwest High being forced to change their educational approach or face punitive measures as a result of the very narrow view of school success dictated by the *No Child Left Behind Act*. Additionally, as discussed in chapter 2, some education reformers believe a radically different approach to teaching and learning is needed to adequately prepare students living in the knowledge society. This new approach requires a substantial change in the basic educational culture.

My findings provide a portrait of the on-the-ground realities of life within two schools, both working to create and maintain what they perceive to be a culture for 21st century and deeper learning that prepares students to participate in the knowledge society. What follows is a discussion of my findings as they relate to my research questions, the main one being how is school culture shaped by the implementation of the New Tech model at each site? This involves an understanding of the cultural ideals of the New Tech Network and also how members are enculturated into the New Tech model of education. Experiences of school members working within the model, including their engagement with ICTs as well as the challenges of working within the model are also discussed.

7.1 The cultural ideals of the New Tech Network

Fullan (2011: 5) makes the case that changing the culture of school systems, that is the “values, norms, skills, practices, [and] relationships” within that system,

should be the main driver for reform efforts. The New Tech Network is an organisation that views school culture as the foundation for their reform efforts. As such, there are a number of espoused values that they seek to foster in New Tech schools. Some of the prominent values that have been discussed in this thesis are trust, respect, responsibility, relevance, and relationship-building (New Tech Network, n.d., n.p.). The New Tech Network views the development of these values as important for school success as they underpin their specific education process, which is heavily invested in collaborative PBL for students and high levels of collaboration among staff members supported by ICTs. New Tech teachers and students go through socialisation and enculturation processes, discussed in detail later in this chapter, which are intended to help them to internalise the New Tech values and approach to education. It is also expected that this internalisation will shape behaviours and practices in ways that support the educational approach. These processes are complex, challenging and context-specific.

7.2 New Tech Schools within the broader context of education reform

Reframing the roles of teachers and students in the knowledge society

I have illustrated in detail, in chapters 5 and 6, how school culture in New Tech schools is shaped by reframing the roles of teachers and students. This reframing is, in many ways, different from the more traditional model of education described in chapter 2. Teachers are taught to work as facilitators, although direct teaching, often referred to as “workshopping,” remains a part of the education process. Also, students are expected to take on a more participatory role in the education process. Collaborative PBL and the use of ICTs support these roles.

Ideas like teacher as facilitator, students as more participatory agents, collaborative group work and incorporating projects with real world relevancy are

not new. As discussed in chapter 2, Dewey advocated for these very ideas (Dewey, 1906, 2008) as well as others like Kilpatrick (1921), and Rugg and Shuaker (1928). Additionally, Carl Rogers (1969), a prominent American psychologist who was influenced by Dewey's work on experiential learning, wrote about facilitative learning. He emphasised the role of education in teaching students how to learn in order that they may be able to be flexible and adapt in a world that is ever changing. His view was that,

Changingness, a reliance on process rather than upon static knowledge, is the only thing that makes any sense as a goal for education in the modern world (Rogers, 1969: 104).

Certainly, the main critique voiced by politicians, academics and business leaders, as discussed in chapter 2, is the perceived lack of change in the practices of educational institutions. They view change as necessary to meet the needs of a burgeoning knowledge society. However, Dewey's goal was not simply to meet the economic needs of society. He argued for democratic education with the goal of empowering all citizens, regardless of social class, to participate in the democratic process. He stated,

"In order to have a large number of values in common, all the members of the group must have an equable opportunity to receive and to take from others. There must be a large variety of shared undertakings and experiences. Otherwise, the influences which educate some into masters, educate other into slaves" (Dewey, 1916: 97-98).

As discussed by Reich, Garrison and Neubert, the economic forces of capitalist competition create a reductionist view of education solely focussed on creating workers to sustain national economic wealth. This pushes against the Deweyan ideal of democratic education (Reich, Garrison and Neubert, 2016: 1004). It thus

raises the question of whether democratic education can be realised while at the same time addressing national economic interests.

Like Dewey and Rogers, Bruner (1996) has also been an advocate of the facilitation of learning and a more participatory role for students in schools. He is critical of the traditional pedagogical approach to teaching and has argued that,

In most matters of achieving mastery, we also want learners to gain good judgment, to become self-reliant, to work well with each other. And such competencies do not flourish under a one-way "transmission" regimen (Bruner, 1996: 21).

Biesta (2015b: 2) argues that the focus on repositioning the role of the teacher to that of a facilitator has resulted from the critique of traditional teachers as authoritarian figures where students are “objects of the interventions of the teacher” (Biesta, 2015b: 3). However, he suggests that teaching may involve a different type of relationship between teacher and student, one in which students exist as subjects. He argues that being taught or being “addressed” by the teacher should not automatically carry the assumption that the act of teaching makes students simply passive listeners and teachers merely transmitters of knowledge. He makes this point by explaining that when the teacher addresses students, it is not speech they are just to receive but rather they are being summoned to respond (Biesta, 2015b: 11).

In this view, teaching involves transmission, but it goes beyond that to encourage a dialogue. In fact, I would argue that even when a student has not verbally responded to the summoning of the teacher, there is often an internal response in which the student is considering what has been said, questioning it and trying to make sense of it. It is not passive. The student’s mind is working, as supported by constructivist views of learning (Piaget, 1954; Vygotsky, 1978).

Facilitation, as I observed it, also involves summoning of students. However, this process is multi-faceted. For example, students create a plan of action to complete projects or solve problems in collaboration with others. It is not only the teacher who summons a response from students, but also the student group members summon each other, and community partners ask students questions about their work and provide feedback. The summoning is multiplied.

What I understand Biesta to be saying here is that the kind of teaching in which the student is a subject constitutes a different kind of authority, with the teacher acting as an expert engaging in both transmission and dialogue with students on a particular topic. I agree with his view that this act of teaching is essential to the education process and should not be sidelined. This thesis illustrates how facilitation is actually practiced in New Tech schools. I found that facilitation did not manifest itself as the total abandonment of direct teaching, as the realities of the classroom (e.g. students' level of understanding of a topic and their ability to work independently) shape the teaching approach.

I observed both types of teaching at each school. For example, there were some lectures given to impart information and promote dialogue at each location. There were also workshops, focused lessons or mini lectures with small groups of learners, conducted to help students understand concepts. An example will be helpful here. In the Biology/Health class, discussed in chapter 6, multiple activities were going on at once in the classroom. Some students were working on projects and others were reviewing for an upcoming test with one teacher, while another group was involved in a workshop with the other teacher in the classroom. This particular workshop was a short lecture on the topic of DNA. The interesting thing about workshops is that the teacher can determine when and for whom they are

needed and, in this class, students can request a workshop on a particular topic by writing it on the dedicated workshop request board. This functions as a form of differentiated instruction to meet the various needs of students.

As noted earlier, Bruner takes issue with teaching as an exercise in transmission and, as discussed in chapter 2, Bereiter (2002: 64) suggests that workers capable of working creatively with conceptual artefacts (ideas, theories, concepts, designs) will be in demand in our knowledge society. So then the question is, are we preparing students to work with (create or improve upon) conceptual artefacts? Bereiter argues that the education system has been educating students based on a “folk-theory” of “mind as container” - mind as a holding space for knowledge that has been transferred and stored until needed. He notes that this view is insufficient for working with conceptual artefacts.

There was evidence of students working with conceptual artefacts at my fieldsites. I provide an example of this in chapter 5 where students at Midwest High were connecting their school norms to particular sociological theories. They created art objects to portray how the theories apply to the norm and students shared their work with others within the school. In line with the views of Dewey, Rogers, and Bruner, the facilitation approach used in New Tech classrooms moves away from an information transmission model of education and instead moves towards a more participatory collaborative approach incorporating real-world relevance. However, direct teaching or “workshopping,” as it was referred to at my fieldsites, has not been abandoned.

Building social and human capital

Expanding the social network: collaborative group work and collaborative partnerships within the wider community

The values (trust, respect, responsibility), practices (collaborative project-based learning) and changes in roles (teacher as facilitator) at New Tech schools coincide with notions of preparing students for success in the knowledge society. Two important aspects of this preparation involve the development of social and human capital through the practice of collaborative group work and collaborative partnerships with the wider community. Szreter (2000: 57) describes social capital as flowing

from the endowment of mutually respecting and trustful relationships that enable a group to pursue its shared goals more effectively than would otherwise be possible.

Collaborative group work in New Tech schools is meant to enable a greater number of students to experience success in school, more than the traditional individualized model of education. In these instances, the development of social capital stems from interactions of peers within the school and the local community.

In chapter 2, I refer to a quote by former United States Department of Education Secretary, Arne Duncan in which he talks about education as the key to the economic success of the nation and education as key to the development of human capital. Coleman (1988: S100) describes human capital as being “created by changes in persons that bring about skills and capabilities that make them able to act in new ways.” This brings me to a discussion of how New Tech schools, through the development of social capital, build human capital. As discussed throughout this thesis, it is the collaborative talents and efforts of students that enable them to complete projects and support their group members. This interaction in

collaborative relationships and the creation of projects cultivates human capital.

Students were able to describe these new ways of acting. For example, Mark, a 4th year student at Midwest High, explained that he has developed leadership skills through working in groups.

I'm kind of like a top person to a lot of people, so a lot of people say I want Mark in my group. Then when we get in a group, they say we want Mark to be the leader. It makes me feel like I am a leader and that I should not have been as quiet and soft spoken in the beginning because I didn't know I was capable of being a leader and a role model.

Jasmine, a first-year Midwest High student who was accustomed to being a leader and not a follower, said that she learned how to cooperate with others as a result of working on group projects. She explained,

I'm more of a leader than a follower, so you know it's been pretty rough for me trying to get used to groups ... but [now] I cooperate and I've made myself a better person by helping some people out and working in a group.

Human capital development in students includes social and interpersonal skills and, as my findings indicate, helps students to realise their strengths and weaknesses and utilise their strengths to assist their classmates. For example, students learn how to help each other achieve by providing feedback that may enhance project ideas. As discussed in chapters 5 and 6, they also learn problem-solving skills to enhance working relationships with their peers. In addition, the group orientation, in many instances, boosts the achievement of students who may be, for various reasons, underachievers. Students learn how to resolve conflict at both schools and, at Pacific Coast, where the model is well established, my findings suggest that this minimises bullying and violence. These are examples of human capital developed as a result of collaborative project-based learning and the

cultivation of close relationships in which trust, respect, and responsibility are key among students.

Collaboration extends beyond the individual schools and even beyond the network of schools as a means for developing social and human capital. For example, collaboration extends to include parents, which increases their involvement in their child's education and their involvement in school activities. Members of the wider community are also integrated as partners in the educational process and this provides students with feedback from numerous sources in addition to feedback from the teachers. Also, bringing in community experts to speak with students and work with them adds to the real-world relevance of schoolwork. I witnessed this on numerous occasions. At Pacific Coast, I observed a television producer, farm ranch manager, community organisations, parents and other community members coming to participate in the development and evaluation of student projects and to assist with fund raising efforts. At Midwest, I observed renowned poets, lawyers and biologists working as active participants in the education process.

Partnerships with local colleges provide students with a college experience prior to graduating from high school. This may increase the probability of them continuing in higher education. College courses are mandatory at Pacific Coast but are not yet mandatory at Midwest. However, courses are available to them. Also, businesses within the community provide internship opportunities for students, which allow them to explore their interests in an actual workplace environment, helping them to determine early if they have a long-term interest in a particular field. For example, a 4th year student at Midwest High who was interested in a career in journalism obtained an internship at a local newspaper.

Internships are a graduation requirement at Pacific Coast and opportunities are plentiful for students, as there are a number of local businesses in the area. Internships are not a graduation requirement at Midwest High but opportunities are available to students, although to a lesser degree, given that there are fewer businesses in the area. Parents and community members are active in both schools. However, I observed more parents and community members providing feedback on projects at Pacific Coast. Parents were involved to a lesser degree at Midwest, though some teachers were planning to invite them more often to observe projects and provide feedback. Teachers at Midwest had to look further afield to locate professionals to be involved in planning and evaluating projects, as there are very limited prospects in the local area.

Involvement of the wider community in the lives of students, in terms of development and feedback on projects, college course offerings and internships, helps provide connections and support for students directly, as well as support to teachers. The partnerships described here are examples of social capital that lead to the development of human capital for students and teachers. The impact of parent and community involvement on the lives of students is certainly an area for further study with a goal of gaining a deeper understanding of the ways in which it impacts their lives in high school and beyond.

The New Tech model contrasts with traditional education approaches and has many potentially useful features, especially in relation to developing social and human capital. However, context matters and the socio-economic conditions at Midwest High limit opportunities for the development of social capital in terms of establishing partnerships. This means teachers and students do not benefit from that aspect of the model to the same extent that they do at Pacific Coast. I will now

turn to a consideration of how teachers and students are socialised and enculturated into the model.

7.3 Aspects of socialisation and enculturation

I view enculturation and socialisation as two aspects of the cultural process that work in conjunction with each other. For this study, enculturation refers to how participants come to internalise New Tech values and ways of teaching and learning that are shared within their particular school context. Socialisation encompasses how interaction within groups facilitates behaviours and practices that coincide with the New Tech model of education. Evidence gathered from observations of introductory training sessions for teachers, along with observations, interactions and interviews of teachers and students, revealed a multi-faceted enculturation and socialisation process and varying degrees of internalisation of values and methods of teaching and learning for individuals at each site.

How teachers are initially introduced to the New Tech model depended upon a number of factors. For example, teachers hired before the start of a school year, at both sites, normally attend the New Tech annual conference for training. If hired after the start of the school year, the introduction to the model is via working with colleagues. The role of colleagues is a salient one and this influence varied between the two contexts. For example, Pacific Coast High is a well-established New Tech school. During the time of my research, the school was staffed with several seasoned New Tech teachers. In interviews, newly hired teachers spoke about being supported by their colleagues in terms of feeling comfortable asking questions and seeking assistance with implementing the model and other aspects of teaching when

needed. I also observed formal and informal instances of teachers seeking the advice of their colleagues.

The situation was different at Midwest High, as all of the teachers were fairly new to the model, with most having experienced the process of transition. Teachers here were introduced to the model through discussions initiated by Ms. Rowan, the current school principal. Teachers then had the opportunity to visit some established New Tech schools (demonstration sites) to observe New Tech teachers and meet with them to ask questions and discuss the education process. Some Midwest teachers shared with me in interviews that during this period of investigation, the model was embraced by some while others were sceptical of certain aspects, questioning whether it might be better to restructure the school by creating a school within a school, so that New Tech would be an alternative rather than the only option for students. There were also concerns about the extensive use of technology, the cost of adopting the model and the time required for retraining. However, in the end, the model was adopted and, for those teachers who continued their employment and began working within the New Tech approach, this initial observation of New Tech schools and associated discussions with colleagues constitute the first stages of their enculturation into the New Tech model.

Once Midwest became a New Tech school, the New Tech Network employed what LeVine (1982: 124) refers to as deliberate socialisation: socialisation aimed at particular goals. Teachers, ideally, gain a deeper understanding of the model through exposure to the experiential approach to learning employed at the New Tech annual summer conferences. It is here where teachers are immersed in the various cognitive, relational, practical and technological processes of the New Tech model of education. Teachers participate in new teacher training sessions, where

they work in groups with other teachers. They acquire experience working on a project as a team, through which they gain first-hand knowledge and an understanding of the essential elements of PBL and they experience the complexities of working in groups from the perspective of the student. Training sessions are also available for seasoned New Tech teachers and administrators. Teachers from various network schools come together at the conferences to participate in workshops and seminars, to hear talks from invited guests, and to bond and exchange knowledge with others working within the Network.

The annual summer conferences serve as one aspect of the enculturation and socialisation process for teachers. It is the formal introduction to and connection with the wider New Tech professional learning community (PLC). A PLC has been described as an environment where educators “foster mutual cooperation, emotional support, and personal growth as they work together to achieve what they cannot accomplish alone” (DuFour and Eaker, 1998: xii). Additionally, with the introduction of standards, the main focus of PLCs, discussed by Hord (2009: 40), is the study of student data to improve learning outcomes.

DuFour et al. (2010) and DuFour and Fullan (2013) describe six characteristics of PLCs: 1) a shared mission (purpose), vision (clear direction), values (collective commitments), and goals (indicators, timelines, and targets), which are all focused on student learning; 2) a collaborative culture with a focus on learning; 3) Collective inquiry into best practice and current reality; 4) action orientation or “learning by doing”; 5) a commitment to continuous improvement; and 6) a results orientation. These characteristics reveal a focus on teacher practice to support and improve learning outcomes for students, as well as a system of support in a collaborative environment for teachers.

There is much support from educators and researchers regarding the development of PLCs in schools. Indeed, Eaker, DuFour and DuFour (2002: 9) argue that “professional learning communities are our best hope for reculturing schools.” In addition, Chenoweth (2009: 42) and Fullan (2014: 79) posit that student achievement can improve when PLCs focus and work collaboratively on student learning, rather than having staff members work in isolation. Additionally, findings from research by Anrig note that successful schools,

have a much higher degree of ongoing collaboration, communication, coordinated responses to testing data, and structured problem-solving than the norm ... many of these successful public schools share the traits of modern, high-performance workplaces, fostering cultures built on teamwork and a shared sense of mission (Anrig, 2013: 3).

Lastly, Hattie (2012:19) suggests that through collaborative discussions, teachers become more aware of the effects of their teaching. These views support longstanding historical arguments about reform, discussed in chapter 2, that critique the traditional model of teaching in isolation as being inadequate for the knowledge age. PLCs, as a reform effort, are meant to interrupt teachers working in isolation in order to build capacity to improve student learning.

The following section focuses on the PLC environment and how it influences the enculturation and socialisation processes of New Tech teachers. It is through experiences with members of the wider New Tech PLC, within the context of the summer conferences, that teachers first begin to build collaborative relationships in which they learn together and share experiences to support those within the shared practice of which they are now a part.

PLCs: support, accountability and social control

The concept of PLCs carries with it not only ideas of collaboration to improve teaching and learning but also, as noted by Hattie (2012: 19), making the effects of teaching more “visible,” which encompasses notions of accountability. Fullan (2000: 24) refers to this as “lateral accountability,” achieved through a combination of pressure and support. As such, for teachers, participation in highly collaborative PLCs serves as way to improve teaching to meet the needs of students but it also serves as a means of social control, as teachers are subject to the “gaze” (Foucault, 1973) of their colleagues. Social control, as described by Eller, refers to

getting members of a group to conform to expectations and rules and to obey authorities. [This] includes inculcating of social values as well as punishment of deviance from expectations (Eller, 2009: 209).

Hargreaves (1999: 50) discusses the importance of social control in schools. He posits that,

Schools require *social controls* over teachers and students so that they work together in orderly ways, concentrate on teaching and learning and avoid the ubiquitous possibilities of distraction and delay.

For teachers, punishment for deviance of expectations might include complaints from colleagues or punitive action by an administrator and rewards for compliance include appreciation and recognition from colleagues. I use the term “gaze” in a Foucauldian sense but not to imply that the socialising processes in New Tech schools equate to Foucault’s critical view of those processes in clinics (Foucault, 1973) and prisons (Foucault, 1977). I use the term to indicate a process of normalising surveillance that is intended to shape the teaching and learning process but also to facilitate communication among teachers to support their practice. Teachers were always subject to the “gaze” of school leaders making periodic classroom visits for the purpose of evaluation. However, PLCs expand the

“gaze” as well as the responsibility of teachers to assist their colleagues. This gaze extends to parents and other members of the community who work with teachers as they are also engaged in the education process. Additionally, even the physical structure of the schools, specifically the New Tech ideal of the floor-to-ceiling glass windows of the classroom, provide a panopticon-like (Foucault, 1977) environment that allows the numerous visitors who tour the school to survey classroom activities. These features, combined with the incorporation of team teaching, ensure that teachers are never beyond the “gaze” of colleagues or outsiders.

Coleman (1990: 243) notes the modes through which power is exerted, from top-down implementation by force to more subtle forms of implementation through internalised norms. In contrast to a straightforwardly authoritarian top-down approach, PLCs employ a lateral accountability approach. The normalising gaze inherent in the peer-to-peer socialisation and enculturation process is a very useful and powerful method for shaping school culture, perhaps much more powerful than a more authoritarian top down approach. The lateral accountability that functions within the PLC environment aids teachers in developing as New Tech facilitators. Additionally, the normalising gaze is an element that helps transform teaching from a private practice to a shared public practice. Louis and Kruse (1995: 31) and Fullan (2007: 35) refer to this as the “deprivatization of teaching” as a means for collaboration and improvement of instruction. Public teaching, in the context of New Tech schools, encouraged reflective teaching. For example, at both of my fieldsites, there were team teachers who reflected on teaching sessions by discussing what went well and what needed to be changed. There were also times when teachers changed course during a session if they felt it was not working as planned. This is not an uncommon practice in more traditional schools. However, it

is usually a single teacher reflecting on his or her private practice. Reflection on a shared practice was beneficial for teachers who worked well together. However, for some teams, there were instances of personality clashes which made the team teaching aspect of shared practice problematic and sometimes impossible.

Lastly, the high visibility of teaching as a shared public practice serves as a vehicle for the promotion and replication of New Tech schools. This is particularly the case at my fieldsites, as each is designated as a New Tech demonstration school and they host introductory sessions and trainings for teachers within the region. Tours are also conducted, many of which include high-profile politicians and heads of corporations. This allows the schools to also serve as a platform for showcasing the New Tech brand of education reform. This visibility provides opportunities to establish additional partnerships and possible sources of funding.

Working within this structure does not preclude teacher agency, “the capacity of actors to critically shape their own responsiveness” (Emirbayer and Mische, 1998: 971), as PLCs function as a system of checks and balances for the implementation of elements of the New Tech model. For example, at Midwest High, it was determined that project-based learning, as well as combining math with a second subject, was not an effective way, in that particular context, to teach math. Also, when teachers realised that some students felt threatened by certain group members, they limited the number of projects for a class. In these instances, teachers exercised their agency by adjusting elements of the model to fit their local realities.

Socialisation and enculturation at the local level

Processes of socialisation and enculturation continue in each school at the local level with regular visits and communication from a dedicated New Tech coach and support from the two teachers at each school who are certified teacher trainers. These individuals are an important part of the peer-to-peer support network that works to support teachers in their particular contexts after the initial training. They are the immediate go-to people for answers regarding all things New Tech. I observed more reliance on these individuals at Midwest High than at Pacific Coast High. This is understandable, given that Midwest is relatively new to the model, with some teachers not yet fully acclimated. In fact, several of the newly hired teachers at Midwest commented, during interviews, that the on-site trainers were extremely helpful and worked with them when they needed assistance with understanding and implementing the model. The New Tech conference serves as an introduction. However, it is the on-site support and training from colleagues that is meant to help teachers develop a deeper understanding and internalisation of the model. This is meant to provide sustainability, although widespread support, in terms of the number of teachers knowledgeable enough to provide support, was lacking at Midwest. This was confirmed by several newly hired teachers who commented that many of their colleagues seemed unable to assist them. Indeed, it seemed that the transition to and internalisation of the model was easier for some teachers than for others. There are several reasons for this, which I discuss in the following section.

Factors influencing internalisation of the model for Midwest High teachers

I have discussed the role of the annual conferences in the deliberate socialisation process for teachers. However, it is a more complex endeavour to distinguish the factors that contribute to or detract from deep levels of internalisation for individual teachers. One of the goals of the New Tech Network is to transmit, through training and a strong peer-to-peer network, a culture that supports their approach to education. However, cultural transfer, as discussed by Valsiner (2007: 35-36), is a bidirectional process. The New Tech Network may be transmitting cultural knowledge, but teachers analyse, refashion and internalise it. This process encompasses a number of factors, one of which is the nature of their existing identity as teachers. I use Rosenberg's (1979) conception of identity to explore this issue. He suggests that there are four sources of identity formation. The first two are: 1) personal identity, which focuses on the uniqueness of the individual, their life history and experiences and 2) role-based identity, focusing on one's roles or positions in society, for example teacher, student or principal. His last two sources are 3) category-based and 4) group membership-based identity, which have to do with perceived and actual membership in social groups, for example, a teacher's membership in the New Tech Network of schools.

For some teachers at Midwest High, there was a disjuncture between their well-established teacher identity and the notion of teacher as facilitator, along with the values and practices associated with the facilitator role. For example, as discussed in chapter 6, section 6.2, many of the veteran teachers felt that they were essentially learning how to teach all over again. The process was extremely disruptive to their identity as teachers and they struggled to reorient themselves to a new model of teaching. For others, the New Tech ideas were congruent with their

previously held values and ideas about the education process. Additionally, there were teachers with a more traditional pedagogy who still embraced the New Tech approach. In the last two cases, there was a less stressful transformation of professional or role-based identity.

Another issue affecting cultural transfer (going beyond identity) is that teachers have established a deeply ingrained way of working according to a particular educational culture – what Bourdieu (1995: 53) calls a *habitus*, a set of socially ingrained dispositions or tendencies to act in a particular way. The usefulness of Bourdieu’s concept of the *habitus* is noted by Emirbayer and Mische (1998). They suggest it is an important concept for demonstrating how formative experiences “deeply shape the web of cognitive, affective, and bodily schemas through which actors come to know how to act in particular social worlds” (Emirbayer and Mische, 1998: 981). For this study, it is the initial teacher training and years of experience teaching that constitute those formative experiences. According to this model, teachers trained in traditional approaches to education, and/or practicing using these methods, have developed particular mental representations of a teacher and the education process. D’Andrade (1992: 28) defines a schema as “a conceptual structure which makes possible the identification of objects and events.” These mental representations support a set of dispositions or professional *habitus*. For example, in chapter 2, I describe several aspects of the culture of traditional education that have been criticised by education reformers. Those include teacher practices such as working autonomously, lecturing, and producing lessons that students complete individually. These practices flow from deeply-rooted historical mental representations of teachers and their work. In contrast, New Tech teachers do not work autonomously. They limit lectures and, in

many cases, develop collaborative student projects. Transitioning to the New Tech approach to education thus requires a change in schemas to support a revised professional habitus. However, this is not easy and the following quote from Ms. Burke, at Midwest High, captures the challenge of developing a revised habitus. She states,

You had to change your behaviour that you'd done for 25 years. And even when you want to do it, some of those things are just like breathing. It's a reaction. It's a reflex. So you just have to be very mindful but you had to be mindful of so many things.

The Enculturation of students at Pacific Coast and Midwest High

Turning back to students, the processes of enculturation and socialisation for them varied between schools. At Pacific Coast, most incoming students had already had opportunities to hear from and ask questions of current Pacific Coast students as part of their outreach program. Additionally, students who are accepted to the school attend sessions with their parents so that they learn more about the school and what is expected of them. Incoming students also attend a summer barbeque, where they interact socially with current students. This session is one way of socialising new students into New Tech through interacting and participating in games and conversations that help them to begin to understand the school culture and feel connected to the community. In New Tech terms, it is a culture-building activity. Additionally, teachers of first year students play a significant role in fostering values and helping students to work in collaborative groups and develop the skills needed for this type of education experience.

The socialisation and enculturation processes for students are heavily influenced by their peers, particularly the more senior students who mentor the younger students and model behavioural norms. These efforts serve as a source of

externalised social control. Externalised social control, in which the source “lies outside the individual, in the form of individuals, groups, and institutions with the power to sanction behaviour” (Eller, 2009: 209), can be seen when sanctions, positive or negative, are imposed upon students. Radcliffe-Brown’s (1952: 205) theory of social sanctions posits that sanctions are imposed on members of a society based on behaviours that are approved or disapproved by that society.

Within the context of Pacific Coast High, undesirable behaviours were met with informal negative sanctions in a variety of ways, for example, students not giving credence to the behaviour or through student comments such as, “we don’t do that here.” Students also used direct verbal reprimands and discussions of problem peer behaviours with a teacher. In these efforts, students act as agents of social control. Formal negative sanctions involved teacher intervention and included being ostracised from a work group. This was imposed as a last resort when all efforts failed to persuade a group member to contribute to a project. Additionally, freedoms and privileges (i.e. open campus, high degree of independence, input on school activities and policies) could be restricted.

In addition to formal and informal negative sanctions, there were also formal and informal positive sanctions for desirable behaviours. Examples of formal positive sanctions were good grades and awards. Examples of informal positive sanctions were having the trust of group members, positive feedback from peers, teachers and community members. Also, heightened social status among peers occurred when students were recognised as effective group leaders. Older students at Pacific Coast typically have a higher status due to their role as mentors to younger students. They are recognised by staff members as the promulgators of school culture. This is advantageous to teachers, as they see the positive effects of the

influence of peers on decreasing negative behavioural issues. It is also advantageous to the student body, as they retain the freedoms and privileges to which they have become accustomed.

In addition to external control mechanisms, there are also internal sources of control that come into play with enculturation, the process of norms and values being internalised. Internal controls may include notions of honour, morality, guilt and shame. Internalised controls develop within the individual whereby they control their own behaviour or self-regulate and conform to the rules and norms of a group or society. Nadel (1953: 266) argues that self-regulation requires an understanding that customary behaviours are considered by members to be “desirable and good; or, this way of acting happens also to be safe, known routine.”

In the case of Pacific Coast, the vast majority of the students I interviewed seemed to realise that self-regulation was in their own best interests, as students need to work together and help each other. Failure to work together on the part of any member creates more work for fellow group members. This creates tension and sometimes anger within the group. As discussed earlier, students in both schools used methods to try and resolve tensions and conflicts by figuring out ways to encourage those who are not doing their work. These methods were employed to resolve conflict, mend rifts within these social relationships and bring the offending group member back to the group collaborative process. Within the social structure of New Tech schools, it is the student, usually the group leader, and not the teacher who is the first to intervene to get students to abide by the social norms for academic life in these schools.

At Midwest High, the role of teachers in the enculturation of students is similar to what I observed at Pacific Coast. However, Midwest teachers played a

much greater role in the enculturation process for students, as the student peer-to-peer network was not as well-developed. As discussed in chapter 6 section 6.2, there were examples of teachers grouping particular students together for group projects to maximise the probability that all students would participate and complete assignments. These groupings were carefully constructed so that, essentially, students become the motivators for their peers and there is ideally a feeling of responsibility to complete assignments. In a group situation in which students must depend on each other, the ideal scenario is that the harder working students will influence, assist, and when necessary, exert some pressure on group members who may not be as diligent about completing their work. Again, this is essentially a transference of what has traditionally been the responsibility of the teacher onto the students. It is a non-traditional method of social control in a formal education context. Some students gladly accepted the responsibility of figuring out how to help group members succeed. However, some students also expressed frustration when grouped with students who do not fulfil their responsibilities.

Another context in which teachers at Midwest High worked to instil New Tech values was during parent-student conferences. The teachers of 2nd year students worked with the students in a manner that allowed them to take responsibility by leading the conference instead of what is usually the norm: allowing the teacher to lead the conference. Developing students who internalise the New Tech values of trust, respect, and responsibility underpins the education process. However, it remains to be seen if students at Midwest will one day exhibit the internalisation of these values to the same degree that it is exhibited at Pacific Coast. As discussed in chapter 6, it is happening among some students and the

middle school in the district is now a New Tech school. This means that students will arrive at Midwest having had experience working within the model.

7.4 Democratic distributed leadership

One of the goals of New Tech schools is to create an environment in which all members have a voice and participate in school decision-making processes. One way that the schools work to achieve this is through a democratic distributed model of leadership. In describing his concept of democratic leadership, Woods (2005) presents the following four democratic rationalities. Ethical rationality involves a search for the common good within a particular community. Decisional rationality is about “rights to participate in and affect collective, organizational decision-making.” Discursive rationality is concerned with providing staff with opportunities to voice their views and engage in dialogue and present various perspectives. Additionally, Woods discusses therapeutic rationality, which has to do with one’s well-being and the positive feelings generated through participation with others in decision-making processes (Woods, 2005: 12-15). Leadership that promotes the exchange of ideas and collective decision-making is viewed as democratic and moral.

Distributed leadership is described in the literature as a shift from individual models of role-based leadership in the school (e.g. principal or assistant principal) to a model that recognises and incorporates the expertise of other school members, which may include teachers and students. School leaders play an important role in guiding the development of this model within their schools. Harris (2013: 551) notes that,

the core task of the formal leader is to support those with the expertise to lead, wherever they reside within the organisation. It is

to judge when this expertise is needed for the development of the organisation and to engage this expertise in an authentic and respectful way.

In this way, distributed leadership does not negate top-down leadership but instead involves a “co-performance” of the leadership practice (Harris 2013: 48), recognising that situations and activities arise that require the expertise of various people within an organisation. Spillane (2006: 58) refers to this as reciprocal interdependence. Put another way, the purpose of distributed leadership is to

corral the collective intelligence and experience within the school, and thereby to distribute leadership accordingly ... It represents a slight loosening of bureaucracy (Hartley, 2010: 354).

Notions of distributed leadership, unlike democratic leadership, are not necessarily associated with morality or ones’ rights to participation.

New Tech schools strive towards a democratic distributive model. However, there were tensions with regard to teacher participation within this model, with some teachers at Midwest High objecting to taking on added responsibilities, as they viewed them as being administrative responsibilities or burdensome extra duties, required in addition to all of their other responsibilities. Some of these responsibilities centred around student behavioural issues and others involved teacher professional development.

Administrators and staff at this school are still learning how to devise and incorporate a version of democratic distributed leadership that is appropriate for their context. There were some instances in which the democratic aspects needed further development, as the burden experienced by some teachers was problematic. This was particularly the case in instances in which teachers did not have the necessary skills to lead and in instances in which teachers were simply overwhelmed by their current responsibilities or when they were simply not

interested in taking on a leadership role. Lumby (2013) addresses this issue. He takes a critical stance on distributed leadership and suggests that it does not bring about a real change in the power structure but rather it is a “mirage.” He argues that it “maintains the status quo of power” (Lumby, 2013: 582) and that instead of empowering staff members, it actually disempowers them and subjects them to increased responsibilities. He suggests that there needs to be more arguments that problematise the power dynamics of distributed leadership (Lumby, 2013: 583).

However, this goal was not problematic for all teachers and some embraced leadership opportunities and saw them as a way to enhance their professional experience and potential for advancement. Some teachers took on additional responsibilities, enhanced their resumes and either accepted leadership positions within the Midwest High school district or at schools outside of the district. In these cases, internalising the notion of distributed leadership and putting it into action was influenced by the personal and professional goals of teachers. As noted by Torrance (2013), when scholars and reformers argue for the benefits of distributed leadership, they have not always considered teachers’ “professional aspirations, identities and practices” (Torrance, 2013: 354), which may not resonate with taking on more of a leadership role in addition to their main responsibilities as teachers. Clearly, these teacher experiences underscore the need for ethnographic research that can depict and analyse the on-the-ground realities of how these ideals actually play out.

As discussed in chapter 5, section 5.2, teachers at Pacific Coast were heavily involved in school decision-making processes and these processes were not always tension-free, as evidenced by the clash between the principal who wanted to speed

up these processes and staff members who viewed this as an infringement on the collaborative democratic process.

At Pacific Coast, like at Midwest, some teachers were overwhelmed by the number of responsibilities. One teacher shared how she volunteered for certain duties but was asked to take on more by the principal. She was conflicted about her desire to be protective of her time to prepare for classes. However, she did not want to be viewed as someone who was not a team player by not accepting extra responsibilities. This situation is troubling as students should be a teacher's main responsibility. Additionally, the situation was having an undesirable impact on her personal life. I see this as a two-fold problem. This teacher will have to learn to say "no" as she has seen her colleagues do. Additionally, it is important that the principal, as school leader, is able to gauge when teachers are overloaded beyond their capacity. This was an issue at both schools and I must agree with Lumby (2013: 587), who acknowledges that distributed leadership may offer job satisfaction and utilise the experience of teachers beyond the classroom, however, the increased responsibilities undertaken by teachers can be problematic. One teacher may view increased responsibilities as empowering while another may view them as disempowering.

At this point I will return to Wood's (2004) principles of democratic leadership mentioned at the beginning of this section. Certain elements are helpful in considering what democratic leadership should entail and it leads us to questions about the moral and ethical considerations within a democratic distributed model of leadership. At my fieldsites, both the decisional and discursive elements were apparent. That is, teachers' rights to participate in school decision-making processes and time devoted to engagement in discussions about decision-making

were apparent. Additionally, there was evidence of positive feelings or the therapeutic aspect (Woods 2004: 5) of participation. However, I feel that the therapeutic aspect of Woods' framework is limited and too optimistic. These processes are not always therapeutic. In fact, they can be quite frustrating. Interviews with teachers revealed tensions and even negative feelings as a result of long decision-making sessions where it was difficult to agree on a course of action.

Lastly, I question the ethical and moral aspects of how democratic distributed leadership functioned at both of my fieldsites, particularly with regard to the expectations of teachers. I highly support the idea of teachers taking part in school decision-making processes. I also view leadership opportunities as beneficial for teacher development. However, teachers should not feel pressured into it against their better judgment. Excessive teacher workloads is a problem facing many countries. For example, Karsenti and Collin (2013: 147) found that one of the main reasons that new teachers in Canada leave the profession is because of heavy workloads. They report that these teachers leave within the first five years and half leave even earlier, within the first two years. The United Kingdom is also dealing with this issue and in March of 2016 the government released three reports¹⁹ providing recommendations on how to reduce teacher workloads. Additionally, a study of public schools in Springfield, Illinois, found that the average workweek for teachers is 60 hours and 45 minutes and that a good portion of their school day, over one-third, is spent on activities unrelated to teaching (Bruno et al., 2012: 4). The authors make the important point that teachers' work extends well beyond the school day. These issues certainly impact students, especially those in high-need

¹⁹ Reducing Teachers' Workload reports can be accessed at <https://www.gov.uk/government/publications/reducing-teachers-workload/reducing-teachers-workload>

schools, like Midwest High, where teacher attrition is usually high. If one of the goals of New Tech schools is to develop strong relationships between teachers and students, then it is important to keep those relationships stable. It is in everyone's best interest to ensure that teachers feel they can manage the workload.

7.5 School culture and the shaping of ICT use

As discussed in chapter 2, the Gray, Thomas and Lewis (2010) study notes the lack of ICT use in U.S. schools and a number of scholars (Cuban, 1986, 1993, 2003; Cuban, Kirkpatrick and Peck, 2001; Selwyn, 2002; Robertson, 2003; Ertmer and Ottenbreit-Leftwich 2010) claim that this lack of use exists for various reasons, including the culture, organisation and social structure of public schools. The New Tech Network claims that ICTs are integrated seamlessly in their schools. One of the goals of this study was to examine that claim and to understand how the development of a New Tech school culture shapes the use of ICTs.

First, it is apparent that New Tech schools foster what Jenkins et al., call a "participatory culture." It is defined as,

a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing creations, and some type of informal mentorship whereby experienced participants pass along knowledge to novices. In a participatory culture, members also believe their contributions matter and feel some degree of social connection with one another (at the least, members care about others' opinions of what they have created) (Jenkins et al., 2009: xi).

The participatory aspect of the school culture, particularly the sharing of ideas, working together to create projects, and the social connection fostered by this process helps to facilitate the use of ICTs for various aspects of the education process. For example, in chapters 5 and 6, I discuss how students at both Pacific Coast High and Midwest High utilise ICTs to communicate and work with their

group members even when they are absent from school. In many cases, Google Docs, social media sites, VoIP (voice over internet protocol) and mobile phones are tools used by students to collaborate and share knowledge. Students at both fieldsites had access to the internet at school and their access to social media sites, with few exceptions, was not blocked.

Jenkins et al. suggest that youths should be encouraged to become “full participants in contemporary culture” (Jenkins et al., 2009: 9) and that there are several ways through which this can be accomplished such as affiliation with online communities or the creation or modification of online content. The projects I have discussed in chapter 5, section 5.1 and chapter 6, sections 6.1 and 6.2 incorporate collaborative problem-solving and many of the projects (e.g. “HBO Productions Presents,” “The moral implications of DNA” and “Pick me, pick me”), involved the creation of online content. In a discussion about social skills and cultural competencies, Jenkins et al. (2009: 20) stresses the importance of developing social skills for using new media. He advocates helping students to expand their view of their participation in social media from one of merely personal use to one of participation in the wider community. This supports the argument that blocking these sites is in fact “an anti-educational practice that reinscribes the identity of the school in its traditional structures of enforcement and control” (Somekh and Lewin, 2008: 61). It is the cultural approach of New Tech not to ban these sites, but to teach students how to use them in ways that develop them as active participants in contemporary culture. Methods of control still exist but have shifted from totally banning sites to the reliance on an internalised value system which, ideally, results in students monitoring the behaviour of their peers.

De Freitas and Conole (2010: 17) note that the use of technology tools that support “more participatory and communicative capabilities” has greatly increased. Previous tools were more geared toward individual endeavours. My research demonstrates how the shift from an individualist to a more collectivist and participatory approach to education is particularly suited to the use of communicative and collaborative technologies.

In addition to the participatory aspect of school culture, the pedagogy, value system, and the ways in which educational staff and students perceive the affordances of ICTs each shape the use of ICTs. Norman defines affordances as “the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used” (Norman, 1998: 9). In New Tech schools the affordances of ICTs help to enable the facilitator to encourage students to become independent learners utilising the internet to locate information for themselves and to collaborate with classmates.

The use of ICTs facilitates a change in the relationship between teachers and students in New Tech schools. Davies and Eynon (2013: 85) note that often technologies, in school settings, have been used in ways that support the traditional transmission model of education without changes to the “traditional relationship between teacher, learner and knowledge.” However, at my fieldsites, several teachers spoke about how the use of ICTs changed the traditional teacher-student relationship. For example, Mr. Allen, at Pacific Coast High, spoke about not having to be the “ultimate authority” and pushing students to search for answers on their own. Mr. Hopkins, also at Pacific Coast, talked about students using the technology to “supplement” their learning. At Midwest, Mr. Loch spoke about using digital content as an alternative to lectures, providing a variety of content options that may

better suit individual student needs. Additionally, Ms. Bolton and Ms. Marks used Echo to communicate emotionally supportive messages to students. These examples illustrate how ICTs are used to shape teacher-student relationships in ways that are less authoritative, underpin the pedagogy, and address the emotional needs of students.

The use of ICTs is also shaped by the New Tech ideal of a democratic culture, with staff and students involved in school decision-making processes. Teachers at Midwest spoke with me about using tools like Survey Monkey for teachers to vote on issues and teachers at Pacific Coast utilised online forums as a way to extend decision-making meetings and discuss teacher comments and suggestions.

As discussed in section 7.3 of this chapter, students, particularly at Pacific Coast, act as agents of social control for their peers because they have internalised the New Tech value system. Just as teachers are subject to the “gaze” of their colleagues, students are subject to the “gaze” of their peers who impose informal negative sanctions on those who do not conform to behavioural norms. This shapes ICT use, particularly at Pacific Coast, by limiting the off-task behaviour of students when using the internet. Furthermore, New Tech’s focus on interdependent relationships within groups of students means that it is in the best interests of the collective to ensure members do not succumb to internet distractions.

Lastly, the New Tech ideal classroom layout and technology infrastructure shape ICT use. The large classrooms, variety of workspaces outside of the classroom, and the one-to-one networked computing environment are conducive to ICT-supported collaborative group work as students move freely to preferred workspaces with their laptops.

Based on my findings, I argue that school culture helps shape the use of ICTs and, in turn, the use of ICTs shapes school culture. I share this view with Schofield who argues that,

equally fundamental to realizing the potential of computer technology to improve education is an awareness of schools and classrooms as social organizations that both influence the way in which any new technology will be adopted and are influenced by that technology in sometimes unanticipated ways (Schofield, 1995:5).

I would not characterise the ICT integration I observed as seamless, as that implies a smooth process devoid of any major issues. ICT use does vary based on factors such as subject area, the needs of students and student behaviour, as I have discussed in the context of Midwest High in chapter 6, section 6.3. However, the pedagogy, internalised New Tech values, and technology infrastructure converge to create, particularly at Pacific Coast, an *ICT-facilitating school culture*, one in which ICTs are essential everyday tools in the education process.

As discussed in chapter 2, Castells argues that the network society has emerged as the result of “the interaction between the new technological paradigm and social organization at large” (Castells, 2005: 3). The use of digital networking technologies has transformed, in many instances, dimensions of social organisation, the interactive associations or networks among individuals and groups. However, this has largely not been the case in schools. This thesis, however, has illustrated how a particular pedagogy and culture of education interacts with digital networking technologies to shape the education process in New Tech schools in a way that develops what Castells (2004: 26) calls “self-programming capabilities.” He argues that self-programmable labour, which requires the ability to locate information and recombine or reconstruct it and apply it towards a particular task or goal, is highly valued in the network society. The facilitation of learning in New

Tech schools, which pushes students to use the internet, is meant to develop self-programming capabilities in students as they use the internet to locate and reconstruct information and also to collaborate and consult with group members to complete projects. As discussed earlier in this chapter, human capital for students includes the development of social and interpersonal skills, the ability to realise individual strengths and weaknesses and skills to assist others in the learning process. The development of self-programming capabilities also constitutes human capital.

These self-programming capabilities manifest themselves in the ways that students extend formal learning, mixing it with informal modes of learning outside of the school using a variety of ICTs. Formal learning has been described as,

learning that is designated, designed, and managed by educators on behalf of learners, within institutions such as schools, colleges, and workplaces [and informal learning as] what happens outside of the structures and boundaries of formal education, the topic or focus of which is determined by the person doing the learning, on their own or with others (Davies and Eynon, 2013: 330).

Greenhow and Lewin (2016: 10) argue that “students may practise learning with formal, informal, and non-formal attributes across a wide range of contexts and exercise considerable authority over how they learn, when they learn, and with whom.” Findings from my research indicate a blurring of the lines between the formal and informal. For example, formal projects at New Tech schools are assigned by teachers and often teachers designate the groups. However, students exercise authority by deciding how they will address a topic, the role of each project group member, when they will meet, and what digital tools they will use to collaborate and communicate. As discussed in chapter 5, section 5.7, students at Pacific Coast made a conscious decision to use Facebook, as they recognised the useful affordances it

offered for communication, collaboration, knowledge sharing, and information on extra-curricular activities. These activities demonstrate “varying attributes of formality and informality” (Greenhow and Lewin, 2016: 7) as students use the internet in the learning process. A key element which facilitates this is the capacity of the New Tech model to “accommodate the core elements of informal online learning, such as high impact engagement, collaborative activity, and individual choice” (Davies and Eynon, 2013: 345).

Many students chose to use Facebook instead of Echo, the New Tech tool, for communication because students, as one participant stated, were “always on it.” In addition, the utilisation of Facebook at Pacific Coast allowed students to exercise a greater degree of control over the audience, which could be restricted to students, so their activities in this space were not visible to teachers. This illustrates how certain digital tools vary in the “degree of control that learners have over aspects such as direction, audience, and assessment” (Greenhow and Lewin, 2016: 23).

Unintended consequences of extensive ICT use

ICTs support the learning approach at New Tech schools. However, there are a variety of unintended consequences associated with their extensive use. These include a lack of equity for some students in terms of their home access to computers and internet service and also issues with self-control as some students were distracted by social media. Both problems were more intense at Midwest High.

Equity refers to “all people [having] the same opportunities to access and to participate in education through digital technologies” (Selwyn, 2016: 48). Students at both sites can stay after school to access the internet, which is helpful. However,

students with no or limited home access are at a great disadvantage and unfortunately there were no statistics at either school to indicate how many students own laptops or have internet service at their homes. However, all students at Pacific Coast at least have access to a laptop. Most bring their own to school and a very small percentage rent one from the school for a nominal fee. The principal here confirmed that not all students have internet access at home and some work at the tables directly outside of the school building in the evenings and on weekends where they can access the school wi-fi connection.

There are no work areas directly outside of the Midwest High building and, even if there were, there might be issues of safety due to gang violence in the area. The lack of equity highlights how socio-economic conditions in school contexts limit the extent to which a group can work as a collective unit. It affects students' ability to take full advantage of the affordances of ICTs and hence affects the ways in which the New Tech value of responsibility for schoolwork can be enacted. These are issues that need to be addressed if digital equity is a goal, and it should be, given that ICTs are integral to the educational processes and practices within New Tech schools.

Students being distracted by social media is also problematic. Similar to the findings in studies done by Davies and Good (2009) and Andersson et al. (2014), many students at Midwest High struggled with self-control and were distracted by social media to the point that their academic work suffered. The lure of games and other entertainment and social sites was irresistible to some students who used technologies in ways that were contrary to the New Tech values of trust, respect, and responsibility. For example, some students utilised the affordances of ICTs,

more specifically their mobile phones, to digitally capture and upload problematic student behaviours, like school fights, to Facebook.

There were numerous behavioural issues that were amplified by negative comments about classmates posted on Facebook. These behaviours often exacerbated relationships between students that were already volatile. Posting these scenarios online drew in a wider audience of students who may not have seen the fight in person, hence creating a more complex web of distraction. This certainly provides a deeper understanding and varied meaning to the statement by Facer, Furlong and Furlong (2001: 202) that, “technologies enter already existing social contexts within which they are appropriated and reimagined by their users.” Just as students at Pacific Coast High reimagined Facebook and used it as a tool for academic collaboration, some students at Midwest reimagined the same tool and used it for a totally different purpose, one viewed as a transgression within the school context. However, we should be careful to try and discover the motives of students who post these kinds of episodes on social media, as they may not always be as we imagine. We should not rule out the possibility that students post these videos as entertainment or with malicious motives or simply because they do not understand the impact of their actions upon the parties involved. However, posting could be a way of reporting, with the hope that school officials will see it and take action. It may be a way of reporting without being seen as a snitch. Furthermore, these videos and the associated comments left on Facebook may help identify the parties involved, may possibly shed light on the causes of conflicts, and may aid in the development of plans to minimise future conflicts.

The social media scenarios discussed here create a challenge for teachers and administrators at Midwest, where there was a general problem with student

behaviour. In chapter 6, section 6.3, I discuss how the school had to suspend flextime because the majority of students were unable to handle the freedom. I would suggest that these general behavioural problems also manifest themselves when students access the internet. However, the goal is to shape the culture in ways that curtail undesirable behaviours.

The particulars within each school's social context influenced the ways in which ICTs were utilised and teachers at both schools have strategies for dealing with distractions. At Midwest, this involves simply asking or telling students to get off social media sites or allowing students a few minutes at the beginning of class to check Facebook, Twitter or email accounts. Still others incorporate these sites into student projects, which gives them an academic reason to be on it. Additionally, one teacher was able to block access to the internet in her classroom when she wanted students' full attention. This is, of course, in contradiction with the official school position on open internet access and there are students who are savvy enough to get around the blocks, as illustrated by the cartoon strip created by students which I described in chapter 6, section 6.3. At Pacific Coast, some teachers set time limits for certain online assignments. Others worked out compromises for students needing to check urgent messages and one teacher asked students to shift their focus and he provides possible options to help them get back on track. There were significantly fewer transgressions related to ICT use at Pacific Coast, where a culture of trust, respect and responsibility is nurtured and maintained by the students.

The context at Midwest High, specifically the socio-economic struggles for students, which limit ICT access at home, and the behavioural problems, pose major challenges as many students use their unfettered access to the internet in ways that are contrary to New Tech values. However, at Pacific Coast where the New Tech

model is fully entrenched, the pedagogy, internalised values, and technology infrastructure are all aspects that converge to create an *ICT-facilitating school culture*.

Chapter 8

Conclusions: New Tech Schools as a Revitalisation Movement

This thesis has elucidated deliberate efforts to transform school culture at Midwest High and maintain a New Tech culture at Pacific Coast High. Processes of socialisation and enculturation for both teachers and students aid in these efforts, helping to establish values, practices and behaviours conducive to the New Tech model of education. These processes for teachers include being part of the wider New Tech Network, understood here as a professional learning community (PLC), which provides official training sessions and support by New Tech coaches. At the local level, schools are also organised as PLCs in which a peer-to-peer support network exists that supports the new educational culture.

Midwest High faces enormous challenges as they transition from a more traditional model of education to the New Tech model. There were administrative conflicts during the initial implementation period and there were a number of other initiatives being implemented as a result of the school's previous status as a failing school. Some teachers here struggled with the transition to the New Tech model of teaching, as this shift requires a major change in schemas to support a revised professional habitus. There is a peer-to-peer support network in place for teachers and the PLC structure allows for sharing and guidance on how to develop projects and integrate the use of ICTs. However, there is a high teacher attrition rate here that negatively impacts the development of a strong support network. Additionally, this school must deal with the complex needs of students who are economically and socially disadvantaged and staff members face concerns over behavioural issues in the school and gang violence in the area. Teachers here are working to provide an

education for students and they are literally working to save lives. These enormous challenges cause extreme stress and frustration for teachers and complicate the development of a New Tech school culture and educational approach.

Students at Midwest High also have a support network that is still evolving but which faces distinct challenges. Group work was challenging for some students, particularly when working with peers who may not have a strong work ethic and in cases where they may perceive it as dangerous to discuss this issue with the peer. However, there were students who took on this challenge and discussed how this led to the development of new social skills. Some students, particularly those in their first and second year of high school, found it difficult to adjust to a more facilitative teaching style. As with teachers, a change in schemas is required of students transitioning to the New Tech model, as they have been socialised and enculturated into a more traditional education approach. These issues may be lessened in the future, as the middle school for the district is now a New Tech school, which means incoming students will have had experience working within the model. Ideally, this will strengthen the student peer-to-peer support network.

At Pacific Coast High, the local peer-to-peer support network for teachers is well established and very stable and newer teachers felt comfortable seeking help from their colleagues. Having a strong support network aids internalisation of New Tech values and practices for these teachers. In addition, teachers here see New Tech values enacted in the behaviour of students and, as discussed in chapter 5, a number of teachers expressed that their positive feelings about teaching at the school were due, in large part, to positive student behaviour.

Positive student behaviour at Pacific Coast is the result of students having deeply internalised New Tech values, as is manifested when students act as agents

of social control, mentoring and encouraging behavioural norms among their peers. This minimises undesirable behaviours including distractions on social media, which is beneficial given the intensive ICT use within student groups. Pacific Coast High functions as a highly collaborative group-oriented learning community. This strongly contrasts with the more individualist and competitive model of traditional education (and the broader society) in the United States.

The counter-intuitive reality, based on my findings, is that a collaborative collectivist model at the level of school culture might facilitate the goals of national competitiveness and ICT-competence better than the individualist competition-based testing model. The collectivist model, as I observed in New Tech schools, enables ICTs to become integral to the education process as students use a variety of digital tools to communicate and collaborate on projects. This acquired familiarity and proficiency with ICTs and the development of self-programmable skills prepares students to be participants in the networked knowledge society. This addresses the competitive needs of society, not in an individualist manner, but in a counter-traditional collectivist framework.

The technological determinist focus on ICTs (in isolation) as the key to transforming education (discussed in chapter 2) itself reflects the individualistic/administrative cultural perspective, which focuses on two narrow material aspects (computers and test scores) to the exclusion of ideational and behavioural aspects (e.g. school culture and patterns of social interaction) that are extremely important.

The New Tech model incorporates practices that have roots in early pedagogical progressivism. However, there are some major differences, which include an explicit focus on shaping culture, establishing schools as learning

communities, education as the business of the entire community, and the use of ICTs to support a collaborative learning process. The rapid expansion of these schools is in stark contrast with Labaree's (2005) assertion that pedagogical progressivism has lost its influence in public education.

As discussed in chapter 1, politicians often talk about the need to prepare students for the knowledge economy. As noted by Tyack and Cuban (1995: 136), discourses about education reform linked solely to economics are "impoverished." This resonates with the views of Dewey, who advocated for a democratic education with the goal of empowering all citizens, regardless of social class, to participate in the democratic process. Thus, it is important to note that, rather than simply preparing students for work in the knowledge economy, I observed the ability of the New Tech approach, involving collaboration on projects, to develop interpersonal skills, conflict resolution skills, self-regulation skills and critical thinking that are also vital for the U.S. Even given New Tech's corporate-influenced history, with the first school referred to as "the school that business built" and the current external veneer of the model which appears very business-oriented (with contracts, firings, online project briefcases and business partnerships), New Tech addresses education for the knowledge economy while also addressing the social and emotional development of students.

New Tech schools, as learning communities, extend beyond the borders of the school building as parents, community members and local businesses become partners in the education process, thus aiding the development of social and human capital for teachers and students and also assisting schools in making education relevant to the real world. This illustrates that education, in these schools, is not only the business of the schools but it is the business of the entire community.

Schools benefit greatly from community partnerships. However, as illustrated in the case of Midwest High, this presents a greater challenge for schools in economically disadvantaged areas, as they must reach further afield to develop a wider network of partnerships. The socio-economic circumstances in this context limit opportunities to build social capital, which means the benefits of this aspect of the model are severely limited at Midwest.

The findings of this thesis have implications for educators, reformers and politicians as the debate around how to best educate students for the knowledge society continues. The New Tech model is one example of how this might be accomplished through a learning approach focused on collaborative PBL supported by the use of ICTs for learning and for knowledge building. Scardamalia and Bereiter (2010: 2) argue that the education system views learning as the dominant objective of schools. However, they suggest that learning only benefits the individual learner, while “knowledge building is done for the benefit of the community.” They define knowledge building as “the creation and improvement of knowledge of value to one’s community” (Scardamalia and Bereiter, 2010: 8). They also emphasise the need to “work creatively with knowledge” (Scardamalia and Bereiter, 2010: 11) and they make the case that, in addition to learning, schools should be about the business of knowledge building. This is certainly an argument that can be used to support the creation of projects with real-world relevance and the sharing or presentation of these projects within the school and to the wider community. Collaboration among students and sharing completed work with an audience also aids in the process of knowledge building in that peers question the ideas of their classmates and make suggestions for improvement in the group context and community members provide even more feedback on projects.

This thesis also contributes to discourses and understandings of the uptake of ICTs in schools. As discussed earlier in this chapter, scholars have written extensively about the lack of ICT use in schools even when computers are present. It is not the technology that transforms education. The pedagogy must create a genuine need, making ICTs integral tools for the education process. Ideally, there should be a system of cultural values that support the pedagogy and, when internalised, operate as a means of social control keeping students on task. The technology infrastructure must also be in place to support the pedagogy and uptake of ICTs. Together, these features help constitute what I would call an *ICT-facilitating school culture*, one in which ICTs are essential everyday tools in the education process.

However, this approach raises important issues regarding digital equity. If students are expected to collaborate and complete assignments using ICTs, then access to these tools needs to be available at school as well as at home. The lack of reliable home access remains problematic for many students and, as noted by Robinson (2009: 495) and as revealed by my data at Midwest High, directing students to public libraries or coffee shops for access is not always a viable option.

In summary, the New Tech model, encompassing the school culture, value system and practices involving widespread use of ICTs, provides a valuable example of an approach aimed at transforming education. In this thesis, I have discussed changes in the society at large that have led to a movement to create a new culture of education that is suited to the new situation of the society. In anthropological terms, this sort of movement to create a new culture, because the existing culture does not adequately address the needs of the people in contemporary society, is called a “revitalization movement,” defined as “a deliberate, organised, conscious

effort by members of a society to construct a more satisfying culture” (Wallace 1956: 265). The need for a revitalization movement in this education context does not stem from the visions of a shaman or the stresses of colonialism as discussed by anthropologists (e.g. Mooney, 1991). It stems from a view of the realities of the changing society among corporate leaders, educationists and politicians, with corporate leaders taking the lead in the case of the development of the first New Tech school. Certainly, the heavy influence of the corporate sector on education reform raises alarm bells. Lewin and Solomon (2013: 384) remind us that innovative education agendas are often driven by market forces, as was the case in their research on a school in the North of England working to transform learning by making it more personalised and allowing students more control over the learning process. They found that the personalisation agenda was impacted by external market factors, where raising student achievement on GCSEs, in the end, took priority over the original goal of personalisation, as higher test scores meant greater opportunities for school funding (Solomon and Lewin, 2016: 236). Certainly, these market forces are also at work in the U.S. education sector.

As mentioned in chapter 2, many philanthropic foundations wield political power and often engage in what has come to be known as “power philanthropy” and they work to indirectly influence education policy by funding organizations that support their agenda and by infiltrating the ranks of government offices. These influences are discussed by Klonsky who argues that,

Giant foundations and corporate megafunds, such as the Bill and Melinda Gates Foundation and the Eli and Edith Broad Foundation, now underwrite much of what passes for educational reform. Their backing lends a measure of clout, political credibility, and favorable media attention to any program or strategy they anoint as a “model” (Klonsky (2011: 23).

An investigation into the full education agendas of the Hewlett Foundation and the Bill and Melinda Gates Foundation is beyond the scope of this study. However, it is important to recognise that there are particular agendas and political clout associated with a number of foundations and some promote the privatisation of schools and voucher programmes which drain funds from public schools. Certainly, these issues are part of the broader societal influences that impact schools in the U.S. Klonsky (2011) and Ravitch (2016) have written about power philanthropy and how foundations are shaping education policy. Ravitch (2016: 205) refers to this group of foundations as the “Billionaire Boy’s Club.” While reforms are needed to address the changing needs of society, there is also a need for critical examinations of the influence of corporations and other interest groups involved in sustaining and promoting New Tech and other similar reform efforts.

This thesis has many implications for efforts aimed at reform. School culture continues to be an important element of reform efforts, although it has often been overlooked. Simply adding computers does not transform education. What is needed is a pedagogy and school culture that necessitates and facilitates the use of ICTs, a value system that establishes a certain level of social control over the process, and the infrastructure to support ICT use.

This research has illuminated the on-the-ground contextualised realities in schools, which is crucial to an understanding of how implementation of reform efforts and culture change happens in schools. Ethnography is well suited to this endeavour, as long-term presence, participation and the development of relationships in schools helps to elucidate the complexities of reform and culture change.

The complexities of educational reform include the stress of the culture change experience that may destabilise existing teacher identities and modes of practice and that can lead to burnout or at least feelings of being overwhelmed. It may also be destabilising for students who have been enculturated into a more traditional approach to education. The greater focus on the use of ICTs can exacerbate the digital divide in schools, particularly those in socio-economically disadvantaged areas, making the equity issue even more salient. In addition, there may be significant differences in the benefits of a particular model to students in disadvantaged areas as compared to those in wealthier areas. At my fieldsites, this was the case with ICT use as well as with the development of community partnerships in efforts to develop social and human capital among both students and teachers.

This thesis has demonstrated how shaping school culture in ways that support a more collective/collaborative approach to education might facilitate the goals of national competitiveness and ICT-competence better than the individualist competition-based testing model. The group-based collaborative model of New Tech enables ICTs to become integral to the education process, as students use a variety of digital tools to communicate and collaborate on projects. The ICT proficiency and self-programmable skills that students develop help prepare them to participate in the networked knowledge society. This collaborative model of education has additional benefits beyond preparing students for jobs, as students develop a range of social and emotional skills (e.g. interpersonal, conflict resolution, self-regulation, and critical thinking) in the process of collaboration with peers.

To conclude, this thesis highlights the significant role of school culture, especially in situations of reform, illustrating how values are cultivated and enacted

and how this can support educational goals. It also brings to the fore the complexities and obstacles, faced by both teachers and students, that can occur in efforts to shape culture and transform the education process. As discussed throughout this thesis, these efforts are influenced by both internal and external forces. As discussed in chapter 2, Fullan emphasises the importance of whole system reform. This calls for reform that goes beyond individual schools to include entire school districts, entire states or even an “entire country” (Fullan, 2011: 3). Certainly, this can be seen as justification for the expansion of the New Tech revitalisation movement and other reform efforts aimed at changing the culture of education. As such, additional research will be needed to closely examine these efforts, how they play out in classrooms and how they impact the lives of teachers and students in a variety of school contexts.

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Appendix A

Interview Schedule for Administrators and Teachers*

1. (P&M) Tell me about your experience as an educator (years in education, years at this school, prior positions)?
2. (P&M) Can you talk about your role and responsibilities as a school leader?
3. (M) Tell me about the process of Midwest becoming a New Tech school?
 - what's involved for teachers, administrators, students, as you see it?
 - who was involved in the decision process?
 - were all teachers and administrators in agreement?
4. (M) What were the reactions of parents, teachers, administrators and others to the idea of Midwest becoming a New Tech school?
 - If there were those who were against the decision, would you be able to discuss some of the reasons as you understand them?
5. (M) Can you tell me about you and your colleagues experiences of the implementation of the new tech model at the school?
6. (P&M) Tell me about your experience working at this school
 - working within the New Tech model
 - experiences implementing PBL
 - experiences with staff, students & administrators
7. (P&M) Can you tell me about some of the experiences of students working within the model? Successes and challenges?
8. (P&M) Does utilising the New Tech model versus a more traditional approach change the process of teaching and learning?
9. (P&M) Any changes in your beliefs about teaching and learning before after you began implementing the New Tech model?
10. (P&M) Tell me about the organizational structure (for administration) (for teachers) and how the groups work together.
11. (P&M) How would you describe the school culture?
12. (P&M) What are your views on the role of technology as a tool for teaching and learning?
13. (P&M) Tell me about your own experiences using technology for teaching and learning.

*P&M = Pacific Coast and Midwest High
P = Pacific Coast High
M = Midwest High
NTN = New Tech Network

Appendix B

Interview Schedule for Students

1. What made you come to this particular school?
(own choice, parent/guardian choice, other)
2. What is it like for you being a student here?
 - Tell me about some of your experiences here (successes/challenges).
3. How is this school different from your previous school? (If applicable)
4. Tell me about your experiences with teachers.
5. What is it like for you working in groups?
6. How do groups work together when they're not on campus? What kind of technology is used?
7. Tell me about one or two projects that stand out in your mind.
8. Do you have a computer with Internet access at home?
9. Tell me about your technology use
 - School use (use of Echo and other platforms & tools)
 - Use at home or elsewhere
 - Personal use
 - Issues with use
10. Tell me how your classmates use of technology
 - School use (use of Echo and other platforms & tools)
 - Use at home or elsewhere
 - Personal use
 - Issues with use

Appendix C

Interview Schedule for Parents

1. How was New Tech introduced to parents?
2. What made you decide to send your child to New Tech?
3. What has been you and your child's experience of New Tech?
4. Can you tell me about your child's experience of group work and your thoughts about it? What does it look like outside of class when students collaborate online?
5. Can you talk more about your child's use of technology?
6. Can you talk about your and other parent's concerns about the use of technology (reference to issues raised in the earlier parent meeting - Pacific Coast only)

Appendix D

Data Sources*

I gathered the following documents from Midwest and Pacific Coast High Schools, the New Tech Network, and various online sites.

School handbooks (P&M)
Teacher planning documents for projects (P&M)
Teacher planning calendars (M)
Entry documents for lessons (P&M)
Published article by librarian (M)
School culture surveys (P&M)
After-school activity schedule (M)
Teacher/class schedules (P&M)
PBIS Behaviour Intervention flow chart (M)
Description of beginning of the year culture games (M)
Student-led conference survey form for parents (M)
YouTube videos created by students and teachers (P&M)
Parent bulletins (P)
School behavioural expectations document (P)

Online news articles (P&M)

Photographs & video taken by me (P&M)

State teacher evaluation documents (M)
School report card from the State (M)

School board minutes posted online (M)

New Tech conference program book (NTN)
Project-Based Learning starter kit (NTN)
PBL Unit reference guide (NTN)
Teacher and principal evaluation rubrics (NTN)
School Success Rubric (NTN)
Unofficial New Tech history document (NTN)

*P&M = Pacific Coast and Midwest High
P = Pacific Coast High
M = Midwest High
NTN = New Tech Network

Appendix E

Summary of New Tech School Success Rubric

The school success rubric contains benchmarks for how schools are developing culturally as well as in other areas. Schools are classified as “at risk,” “emerging,” or “advanced” based on how well they meet the specified goals outlined in the rubric. An examination of the rubric provides insight into New Tech values. A summary is provided here. However, a more detailed description of the rubric can be found in Appendix E.

The rubric is divided into three domains: Fidelity of Implementation, Ensuring Sustainability and Student Achievement. The first category under Fidelity of Implementation, Curriculum and Instruction, evaluates schools in terms of their development of school-wide learning outcomes (e.g. collaboration and work ethic) and the extent to which PBL is the primary mode of instruction, with diverse, rigorous cross-curricular projects facilitated by team teachers. The second category, Technology, evaluates the quality of the school’s technology infrastructure, the availability of IT support and the extent to which Echo and other digital online tools are incorporated into the teaching and learning process.

The final category, School Culture and Autonomy, evaluates the extent to which the school has established a unique identity and a culture that promotes respect, responsibility and a positive association with the school. The New Tech Network believes that school culture should be similar to that of the professional workplace and that respect, trust and responsibility, perceived as hallmarks of the professional workplace, should be the same in New Tech schools. Ideally, schools should be working toward a democratic culture of education and schools are

assessed on how well student behaviour is handled using non-traditional management techniques.

The second domain of the rubric, Ensuring Sustainability, is composed of two categories. The first, Professional Culture, evaluates schools on the level of collaboration among staff members and with community members, as well as on staff development and support and teachers' ability to evaluate data to improve student achievement. The second category, Partnership Development, focuses on partnerships going beyond the school, including with other teachers within the New Tech Network and with higher education institutions, parents, other community members and local businesses.

Student Achievement is the final domain of the rubric. It evaluates the school's financial situation, including budget and sources of funding. It also evaluates academic success in comparison to district and state content standards and standardised test scores and the extent to which students develop a professional work ethic and learn to be self-directed learners. Students should be able to demonstrate effective use of technology to conduct research, produce work, and collaborate with others. Finally, students should feel prepared for "next steps," including higher education or employment.