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Implementing Change in Instructional Delivery of Classroom Curriculum: A Phenomenological Case Study of Classroom Teachers Implementing A Problem-based Learning Approach in the Classroom

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**IMPLEMENTING CHANGE IN INSTRUCTIONAL
DELIVERY OF CLASSROOM CURRICULUM: A
PHENOMENOLOGICAL CASE STUDY OF
CLASSROOM TEACHERS IMPLEMENTING A
PROBLEM-BASED LEARNING APPROACH IN THE
CLASSROOM**

A Dissertation Presented by

MAURA A HART

**Submitted to the Graduate School of the University of Massachusetts Amherst in partial
fulfillment of the requirements for the degree of**

DOCTOR OF EDUCATION

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Education

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DEDICATION

To my mother, Audrey Dyer Hart, I will always admire your strength and humor
and strive to match the quality of my love to yours

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I am grateful to so many people without whom I would not have travelled far on this remarkable journey.

To Linda, thank you for your time and expertise; your candor and humor. I have been fortunate to be the recipient of your knowledge and care.

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To my family, without your love and humor and complete acceptance of me, I would not be who I am today.

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To my daughters Audrey and Grace, for giving me joy every day.

Finally to my husband, my best friend and forever love, Frank, your unconditional love and support has given me the confidence to become the person you always knew I was.

ABSTRACT

IMPLEMENTING CHANGE IN INSTRUCTIONAL DELIVERY OF CLASSROOM CURRICULUM: A PHENOMENOLOGICAL CASE STUDY OF CLASSROOM TEACHERS IMPLEMENTING A PROBLEM-BASED LEARNING APPROACH IN THE CLASSROOM

MAY 2009

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This qualitative research study examines the holistic experience of secondary classroom teachers who are changing their predominant instructional technique from a mostly traditional teaching method to a student-centered, problem-based approach to curriculum delivery. Using field notes, interviews, focus groups, observations of classrooms and faculty meetings and related document study in conjunction with, and as driven by, simultaneous analysis, the researcher inquired about the nature of implementing change in instructional delivery and those

influences that both help and hinder the process. Data revealed four categories with related findings: practices of changing instructional delivery, a teacher focus on students, elements of working within a culture of change, and the personal experience of implementing a change in instructional delivery.

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CHAPTER 1

INTRODUCTION

In a recent and historic speech to the Joint Session of Congress, Barack Obama called for fast acting and extensive reform for American schools.

In a global economy where the most valuable skill you can sell is your knowledge, a good education is no longer just a pathway to opportunity –it is a pre-requisite. Right now three-quarters of the fastest-growing occupations require more than a high school diploma. And yet, just over half of our citizens have that education. We have one of the highest high school drop-out rates of any industrialized nation (and) we know the countries that out-teach us today will out-compete us tomorrow. We know that our schools don't just need more resources. They need more reform (Obama, 2009).

President Obama speaks as one of many politicians, educators, and citizens who have called for education reform over many years. In 1983, the U.S. government issued a report calling for systemic and large scale reform citing that American schools were failing. “American schools were in shambles, . . . , threatened by a ‘rising tide of mediocrity’ and as a result the country’s economic survival was endangered” (Wagner, 1994 p. 1). Pressure to change public education continues to increase as the globe continues to shrink. A leading education change theorist in Great Britain, David Hopkins, writes, “the amount of change expected of schools has increased exponentially over the past 15 years. Yet, even this situation is beginning to change. Change is now endemic, it is becoming all pervasive” (2001 p. 35). Peter Senge, a leading education change theorist in the U.S. writes this about education change, “driven by public demands for increased performance on standardized tests, schools and teachers find themselves

forced to boost workloads continually while also taking more and more class time to prepare students for the tests on whose outcomes their budget, and even positions may depend” (Senge, 2001 p. 27).

Purpose

Unfortunately, this need for change runs concurrently with a perceived lack of change within the classroom. “After all, the futility of school change is legendary. Perhaps no American institution has been reformed more often, with less apparent effect than the school” (Evans, 1996 p. xi). Though it has now been more than 20 years since “A Nation at Risk” was published, the country has celebrated very few, if any, successful changes in its public education system. “Two decades of education reform have resulted in little real change” (Christensen, 2005, p. 545). In fact, Andy Hargreaves (2003) argues that schools are continuing to decline rather than improve. “Instead of fostering creativity and ingenuity, more and more school systems have become obsessed with imposing and micromanaging curricular uniformity. In place of ambitious missions of compassion and community, schools and teachers have been squeezed into the tunnel vision of test scores, achievement targets, and league tables of accountability.”

Though perhaps every age feels the compelling need for improved public education, it is undoubtedly urgent that schools of this twenty-first century prepare learned and capable students who can meet the challenges posed currently and in the near future. Never has the urgency for change in the classroom been greater. Thomas Friedman (2006) in his compelling history of the twenty-first century, *The World is Flat*, writes, “It is now possible for more people than ever to collaborate and compete in real

time with more other people on more different kinds of work from more different corners of the planet and on a more equal footing than at any previous time in the history of the world –using computers, e-mail, fiber optic networks, teleconferencing and dynamic new software (p. 8).” The rapid rate of societal transformation driven by computer technology in the past twenty years has effected change which is arguably greater than any other time period in history and certainly more comprehensive with regard to geographic impact. While this is exciting in its capacity to create new opportunities, it also presents challenges beyond perhaps any that we have faced to date in the history of the world. If we are to not only compete on a global scale as a nation, but also collaborate with people across the globe who speak different languages, and operate under completely dissimilar, and sometimes opposing, cultural norms, we must teach a very different skill set to our students than that which is predominantly currently being taught in schools today.

Furthermore, the challenges that face future generations are high stakes.

Currently the world exceeds a population of 6.6 billion people with more than half of them living in urban areas creating a need for more accessible urban infrastructures, including water, sewer, transportation, healthcare, trash and waste removal, education, and housing (United Nations, 2009 p. 2). Equally devastating to our current students is that they are the inheritors of the potentially devastating effects of global climate change. The Intergovernmental Panel on Climate Change (2009), in the report of Working Group 1 report the following facts:

Eleven of the last twelve years rank among the warmest...; mountain glaciers and snow cover have declined on average in both hemispheres...; satellite data since 1978 show that annual average arctic sea ice has shrunk by 2.7 per decade...; more intense and longer droughts have been observed over wider areas since the 1970’s...; widespread changes in

extreme temperatures have been observed over the last 50 years... and, Cold days, cold nights and frost have become less frequent while hot days, hot nights and heat waves have become more frequent. (pp. 6-8)

Given the nature of this future, the students in today's classrooms will need the knowledge, skills and dispositions to solve problems of diverse and increasing complexity in collaboration with people and nations from across the globe; while simultaneously competing in a global job market with these very same people. In order to do this, students need to think critically and creatively. Thomas Friedman in his book, *The World is Flat*, identifies this as "the need to develop more of your right brain as well as your left" (2006, p. 306). He clarifies this by specifying that students need to be able to, "forge relationships rather than execute transactions...tackle novel challenges...; (and) synthesize the big picture" (2006, p. 307). They need to make sound decisions, and to work efficiently and effectively with people with whom they share common goals. In short, the problems that our students will shoulder in their future require a skill set that has not been, and still is not, the dominant element of curriculum in our schools (Brooks, 1993). Because of the rapidly changing and increasingly interdependent global network, schools need to prepare students to collaborate, compete and problem solve on a global level.

In order to do this, the predominant instructional approach used in the classroom - that of reading texts, listening to lectures, completing worksheets and otherwise students engaging in mostly passive learning must change (Goodlad, 1984, Ben-Peretz, 1990). "Many critics of our schools would agree. ... most (critics) share a common conviction that radical change is both crucial and possible" (Evans, 1996 p.3). Possible?

“Ambitious sets of content standards, unrelenting accountability pressures, increased diversity of learners, and expanded societal demands all conspire to raise the ante on the performance of schools while exacerbating the difficulty of making needed improvements” (McTighe in Zmuda 2004 p. vi). While there is an urgent need and unrelenting pressure for change in schools, there is little understanding of its frequent failure or its uncommon success.

One reality is certain: those most commonly held accountable for the implementation of change are teachers and apart from the students, those most affected by change in the classroom are teachers. “Researchers need to look more closely at teachers and the powerful impact of attitude changes on productivity, enthusiasm and commitment” (Cohen, 1995 p. 110). Without teachers making critical changes in instructional practice, we simply won’t prepare students who are able to meet the demands of the Twenty-First Century. “Educational change depends on what teachers do and think –it’s as simple and as complex as that” (Fullan, 2001 p. 115).

Research Question

“What is the experience of the classroom teacher as she changes her method of instructional delivery from that of a teacher centered, lecture-based tradition to a student centered, problem-based learning approach?” A search for answers to this question became quickly complex. In a review of the literature I found an intricate triangle, each playing a part in the process of change in schools which I will outline next.

Michael Fullan writes, “...we have to understand both the small and big pictures. We have to know what change feels like from the point of view of the teacher, student,

parent and school administrator if we are to understand the actions and reactions of individuals; and if we are to comprehend the big picture, we must combine the aggregate knowledge of these individual situations with an understanding of organization and institutional factors that influence the process of change as governments, teacher unions, school systems, and communities interact” (Fullan 2001 p. xi). In this statement he speaks to three essential components of school change. First there is the nature of systemic change itself. There is no linear or certain route to change of any kind, particularly change in school classrooms. Second, the culture within which teachers work is pervasive both on an institutional and building level. This “culture” impacts teachers in many different ways and on a number of levels, thus impacting the changes they are able to make within their classroom doors. Finally, the work and development of teachers play a role in the change process that is equally as great as that of either the change process itself or the culture in which they work.

Thus the question begins a journey into the nature of change itself, the effects that the cultures of both the institution of public education and the varied school buildings have on the teachers within them, and the work and personal and professional development of the teacher.

Significance

There is considerable research in the area of institutional change in education and the need for it. There is considerable research in the area of teacher training and the need for best practices. There are few studies, however, grounded in the experience of teachers who are the reformers of education through the use of best practice.

This study begins to bridge the gap in education research looking at the ways in which teachers transform their classrooms in order to prepare their students for the challenges and opportunities of the Twenty-First Century. By looking at the experiences of teachers who are wholly attempting to change their instructional delivery, we can begin to know more about the change process in schools and thus illuminate the ways to faster change.

Chapter two of this dissertation will examine the literature in three areas: the dimensions and complexity of school change; the work of the school teacher; and, the institutional context and culture of schools. Chapter three will outline the conceptual framework and the methods I used within the research I conducted. It will also outline the program and participants involved in the research as well as the data collection and analysis and other related research information. Chapter four will examine the results of the research in four categories: the practice of changing instructional delivery from traditional to problem-based learning; the teacher focus on students; working within a culture of change; and, the personal experience of implementing change. Chapter five of this dissertation will discuss the potential value of this research as well as suggest future research to continue the inquiry around implementing change in instructional delivery.

CHAPTER 2

LITERATURE REVIEW

Introduction

With this literature review, I intend to provide insight on the complex relationship between the nature of change; the work and development of the teacher; and, the role the culture of schools have on the outcome of school change. This paper is a review of three types of literature in an attempt to understand how successful change at the school building level does or does not occur. I cannot hope to develop any new ideas about how school change does and does not happen without a concrete understanding of the nature of school change itself. Thus, the first area of research I will learn from is that of school change. Second, a focus on teachers, the nature of their work and professional development is necessary. Third, I will look at the institutional context that surrounds the work of the teacher. Beyond that I will define and investigate the effects of problem-based learning in a safe learning environment in the classroom through the establishment of a community of learners. I will review this research with my own study in mind –a focus on classroom teachers implementing a change in their instructional delivery.

Part 1: The Dimensions and Complexity of School Change

Components of the Change Process

“Change itself proves Protean, its implementation Sisyphean. We try to define it, analyze it, plan it –management experts speak of ‘mastering’ it- all in vain. It remains elusive, mutable, never what it seems” (Evans, 1996 p. 4). How does the concept of change relate to the purpose of education? Educating our children prepares them for the world of the future. If we can’t embrace change in education, how can we prepare children who are ready to embrace change in their future?

Michael Fullan begins to discuss educational change by writing, “the number and dynamics of factors that interact with and affect the process of educational change are too overwhelming to compute in anything resembling a fully determined way” (p. 49). He goes on to explain that there is no single way to create change. In fact, there are as many ways of effecting change as there are situations requiring it. Mike Wallace and Keith Pocklington (2002) in their book titled, *Managing Complex Educational Change* address the complexities of change with this:

What puts the complexity into complex educational change? Given the variety of forms that educational changes may take in diverse contexts, it seems unlikely that a comprehensive set of defining characteristics could be identified. An all-inclusive definition would have not only to distinguish educational changes that are complex from those that are not but also embrace all circumstances to which the label ‘complex’ might apply. Owing to its multifaceted nature, complex educational change is as straightforward to define summarily as it is impossible exhaustively to unpack in its fine detail (p. 25).

To simplify things, change theory experts use systems, mapping strategies and a variety of ways to divide the change process into sections or phases. Kurt Lewin, an

early social psychologist, divided the process into three states: present state, transition state and desired state. Also viewing change from that perspective, Daryl Conner, a leading author in business strategy, describes the “escalating spin of change” to account for differing perceptions of the change process as it occurs in any system (1992 p. 100).

Michael Fullan begins to simplify the change process by mapping it with an outline of three broad phases which circle around outcomes categorized as either “student learning” or “organizational capacity” (2001 p. 51). The first phase, “initiation”, leads up to and includes the decision to embrace the change, whatever it may be. The second phase, “implementation,” includes the initial attempt to put the change in motion and includes the first through third years of incorporating the change; and the third phase, “institutionalization,” refers to the complete embrace of the change by the school or school district. Within these phases, however, are numerous factors operating simultaneously and the phases do not necessarily imply a natural order of events.

This change process identifies the phases found in any type of change. When discussing change in education, most educators refer to one of five change types: teacher change, curricular change, systemic change, innovation, and reform (Fullan, 1991). One of the factors clouding the understanding of educational change is that educators and people who are affecting and affected by change use the terms listed above interchangeably. Teacher change refers to the personal alteration of the individual teacher. Any social, emotional or cognitive growth within the teacher would fall under this category. Other types of educational change may impact teacher change. Curricular change is that of any alterations in classroom instruction (Fullan, 1991). This area can be as small as a change in the way a teacher might begin class or as comprehensive as a

change in state mandated content goals. Systemic change is that which embraces the institution itself, such as the overlapping and varied impact of the federally mandated No Child Left Behind Act of 2001. Educational innovation refers to specific new materials or teaching practices aimed at improving student outcomes. An example of an innovation might be turning a classroom curriculum into “problems” for students to solve, or the use of the Smart Board in a high school algebra class. Finally, educational reform relates to fundamental changes applied to the entire system which emanate from a “values” change which is usually politically driven.

Fullan’s three change phases can embrace any of these five types of educational change. Fullan also identifies that any educational change also involves at least three components: “(1) the possible use of new or revised materials... (2) the possible use of new teaching approaches..., and (3) the possible alteration of beliefs” (2001 p. 39). He calls this the multidimensionality of innovation. Some examples of the possible use of new or revised teaching materials might be to employ a colleague’s system for teaching spelling or the use of a new edition of a 5th grade math book. The use of new teaching approaches might include employing Cooperative Learning in the classroom or the use of phonics in teaching reading. Finally the third dimension, the alteration of beliefs, might include a change in a teacher’s view of students as learners. For example, a teacher may change from believing that only *some* children can learn to the idea that *all* children can learn. The three dimensions increase in depth and difficulty from one to the next.

The third dimension is the most difficult and the most important of the three. “Changes in beliefs and understandings (first principles) are the foundation of achieving lasting reform” (Fullan, 2001 p. 45). Joseph Blasé in his introduction to his qualitative

study of sources of teacher stress describes change as “precipitat(ing) an imbalance between the individual and the environment, necessitating adaptation to bring the relationship back into balance” (1986 p. 25). Thus a change in beliefs is not to be dismissed; indeed, it should be in the forefront of considerations within the change process.

With this brief, beginning explanation of some components of the change process, we can begin to understand the nature of its frequent failure. Further complicating this change process is that change is not static and as the process develops, the events that move it along can influence the shape, type and scope of the change. Furthermore, no two changes are alike. “Whatever improvements change may promise it almost always increases confusion and unpredictability” (Evans p. 34).

Thus, while the phases of change, types of change and dimensions of change sound well thought out and rational, the theory underlying them is not. Fullan can be called a strategic theorist in his use of Chaos or Complexity Theory to support his ideas of change. Strategic theorists “view of organizations concentrates more on ‘people issues’ and on the non-rational aspects of organizational life” and “Chaos Theory sees systems as not only complex but also spontaneous and idiosyncratic –and most importantly, as unpredictable” (Evans p. 11). Because schools –any organization really- are comprised of people who act spontaneously, idiosyncratically and unpredictably, it is not difficult to see Fullan’s connection of Chaos or Complexity Theory to school change. Also, given the complexity of the processes, types and dimensions of school change, “chaos” seems an effective descriptor.

Fullan's change process stages minimize the chaos of change by putting perimeters around its development. The three stages he uses to describe the process are inclusive of a change from its inception, even the very beginning of an idea, to its complete integration, where the change becomes as much a part of the system and culture as any other standard operating procedure. Fullan also argues that the three changes need to take place on a "tri-level." "The tri-level argument is that educational transformation will require changes (new capacities) within each of three levels and across their relationships. The levels are: the school, the district and the state" (Fullan, 2003 p. 39).

The outcomes, around which Fullan's change process revolve depend upon the objectives of the change idea. "Outcome, depending on the objectives, can refer to several different types of improvement in relation to given criteria" (Fullan, 2001 p. 50). Fullan identifies two change outcomes for schools: student learning and organizational capacity. A student learning outcome might be based upon improved state or national test scores. An example of an organizational capacity outcome might be an improved and streamlined professional development process for a district's certified staff.

Initiation

Rosetta Cohen writes, "those first years ... are clearly the most difficult ones for an institution embarking on long-term change initiatives" (1995 p. vii). Michael Fullan echoes this idea. In the first of his three stages of the change process, "initiation," there is a beginning measured by "the scope of change and the question of who develops and initiates the change" (Fullan, 2001 p. 51). These variables will affect the entire change process but are most evident in the initiation phase. Thus, the outcome, the underlying

reason for the suggested change, and the source from which the change is initiated are powerful agents within the entire process. It is with these two variables that the process is put into motion.

Other factors affecting the initiation stage include, though are not limited to, the programs under consideration; the availability of the identified program; the organizations' capacity to make collective and effective decisions; administrator and teacher support, understanding, and involvement of the change; community support, apathy or opposition to the change; and, of course, federal, state and local funding availability (Fullan, 2001).

“The process of initiation can generate meaning or confusion, commitment or alienation...” (Fullan, 2001 p, 67). Whatever its inception (as long as there is one) the change process will move into the implementation phase where it meets with new and varied influential factors. The “implementation” phase consists of putting ideas into practice. Once a practice, program or other change initiation is adopted, the change process becomes more intricate because it “involves more people and real change is at stake” (Fullan, 2001 p. 70). In other words, the change is no longer an idea, it becomes a reality.

Implementation and Institutionalization

In this stage Fullan identifies nine “interactive factors affecting implementation” (2001 p. 72). He organizes these factors into three main categories: “the characteristics of the change project, local roles, and external factors” (2001 p. 72). These categories carry over from the initiation stage only increasing in their complexity and impact on the

success or failure of the change. Furthermore, the involvement of more people almost always creates confusion as “change means different things to different people; in fact, it usually means something different to each and every individual” (Evans, 1996 p. 21). And, because of the increase in complexity during the implementation phase, Fullan identifies the concept of the “implementation dip.” “The implementation dip incorporates that constellation of factors that creates the sense of anxiety and those feelings of incompetence so often associated with relearning and meaningful change (Hopkins, 2001 p. 38). This implementation dip speaks to the effects of change which then influence the process of change.

In his Foreword to Tony Wagner’s 1994 study, *How Schools Change*, Ted Sizer writes, “one is struck by how difficult change is, how impenetrable institutional habits are, how irrational school politics and the school marketplace can be.” He speaks to the dilemmas found in Fullan’s implementation phase. Habits, social infrastructure and financing all contrive against the successful implementation of school change and it is in Fullan’s implementation phase that these factors are most influential. In fact, the only way a school can find itself in the third phase of Fullan’s change process, “institutionalization” is “by persistently working on multilevel meaning across the system over time” (Fullan, 2001 p. 80).

Once in the institutionalization phase, an average of 5 to 7 years after the initiation of the change, the school or school system generally finds itself adapting to the new program or other change initiation by altering other programs or the existing infrastructure to more fully incorporate the change into the norm of the day to day

structure. It is in this phase that all the factors and operants of the change come together to create and maintain stability.

The difficulties of implementing school change can be illustrated with many research studies; however, I will focus on one. Rosetta Marantz Cohen writes about the initiation and implementation phase of the “Quest Program, a ninth grade interdisciplinary course designed to fulfill requirements for both history and English” in her book, *Understanding How School Change Happens Reform at Brookville High* (1995 p. 6). She did a qualitative study of this implementation while participating as a college faculty member of the college partner of a Professional Development School. Her data collection consisted of “participant observations, documents, interviews, and taped transcripts of meeting and classes gathered over the course of three years” (p. 9). She shares the results of this study predominantly with the perspective of the classroom teacher in mind. Though this is a narrow focus, her results resonate with several of Fullan’s ideas regarding the initiation, implementation and institutionalization phases of school change.

I told you so,’ said Gail, to a circle of dazed, grey faces seated around the worn desks of the newly designated Quest classroom. A week into the school year, the six teachers of the quest pilot were still in shock over what had become of the schedule. Virtually nothing had emerged as promised (Cohen, 1995 p. 45).

The high school in Cohen’s study, “Brookville High,” began a decline in the 1980’s that continued into the early 90’s and was addressed by a series of school, town and board meetings as well as reports from school consultants and professional associations during the course of that time. The focus of the problem seemed to be a lack of connection within the community that spilled into the school resulting in a lack of

community among the students, the faculty and in the relationship between the school and the parents and wider community. Finally in 1990, the superintendent expressed concern over the “excessive divisions between kids” and a task force was developed (Cohen, 1995 p. 20). This task force met during the summer of 1990 and throughout the following school year and then began implementation of the Quest Program in the fall of 1991.

The Quest Program was to be an interdisciplinary course for ninth graders combining both English and history. The ninth grade team at Brookville High decided to use this course as a way to address both a lack of a community among students as well as falling scores in the liberal arts. The ninth grade team consisted of six teachers but only two were to “team teach” the class which was to be 90 minutes long and meet daily.

The process leading up to the fall of 1991 in Cohen’s study falls under Fullan’s initiation phase of change development. Fullan argues that “innovations get initiated from many different sources and for different reasons” (2001, p. 53). The reasons cited for change at Brookville High were many and varied ranging from a decline in student population, a major staff turnover, an increase in student diversity and a decline in student test scores. Also, the call for change came from a variety of sources ranging from parents, town officials, students, and school administration. But the final impetus came from the superintendent’s call to develop a task force. “Initiation of change rarely occurs without an advocate, and one of the most powerful is the chief district administrator... (Fullan, 2001 p. 59).

During this initiation phase at Brookville High, the task force studied many different innovations looking for the correct fit and for a program that was doable and

had potential for success. They visited schools, met with consultants and read a variety of texts all while continuing to meet on a monthly basis. Fullan refers to this as looking at “program clarity and quality” (2001, p. 55). Brookville High finally chose to focus on implementing a single change around a common goal, the growing disconnectedness of both students and faculty.

As well as electing a single goal, Brookville High also considered the aspects of “access to information” and support (Fullan, 2001 p. 57). The program they settled with had relatively local schools which were also using the program they selected as well as a supposed large infrastructure for ongoing support. Fullan cites the logistics of access as one of the factors of initiation but warns that access to this infrastructure of support varies a great deal from school to school and district to district. He calls this, the “differential access to information” (2001 p. 57).

Fullan speaks to other “dilemmas of initiation” in terms of “mobilizing people and resources” (2001, p. 65). In any school change situation it is difficult to determine whether a change ought to be initialized from the “top down” or to seek majority agreement before the change initializes. Brookville High chose a combination of the two, beginning with a top-down mandate for change that was developed through teacher participation and teacher/faculty research.

The change process at Brookville High had a clear demarcation between initiation and implementation as it was a course design that began during the fall of the school year; though Fullan cites that, “the relationship between initiation and implementation is loosely coupled and interactive” (2001 p. 7). However, given the number of problems that surfaced during the first week of implementation, it can be

argued that the initiation and implementation phases at Brookville High were demarcated a little prematurely.

The first year of implementation of the Quest Program in Cohen's study was a rocky one much as Michal Fullan predicts. "A large part of educational change may be less a question of dogmatic resistance and bad intentions (although there certainly is and are both) and more a question of the difficulties related to planning and coordinating a multilevel social process..." (2001 p. 69). During that first year the Quest Program experienced logistical difficulties, differences of opinion between teachers, a lack of trust and understanding from the parents, and confusion on the part of the students participating in the program. As well as these setbacks however, the task force teachers of the Quest Program also experienced an increased sense of "team" and an outpouring of local support from area businesses. The end of the year brought expected mixed results and several changes but the teachers were inspired to continue their work in the following year. Dan Lortie, predicts this oscillation of momentum in the final chapter of his groundbreaking study, *Schoolteacher*. "One might hypothesize, therefore, that the movement toward change will prove to be not linear but erratic; the forces of change and resistance will probably interact contrapuntally" (1975 p. 219).

The next two years in the Quest Program of Cohen's study saw improvement in the quality of delivery in the classroom, increased student performance and attitude, a new respect from parents, and an increased interest on the part of non-participating teachers so that by the third year, the Quest Program had definitively found its place at Brookville High. This is Fullan's Institutionalization phase.

Quest did survive, and by the end of its second full year of implementation, few questioned its inevitable place in the school culture. By late spring of the

previous year, some subtle change of attitude had worked its way into the consciousness of Brookville High School. Now, in the fall of the third year, there seemed to be a marked shift, a new acceptance of the inevitability of change among the great majority of teachers, old and new, conservative and liberal (Cohen, 1995 p. 71).

Michael Fullan would account for the success of the Quest Program because of its “system of variables interacting over time” (2001 p. 71). The implementation of the Quest program was successful because it established a need prior to the initiation. Also, the program the teachers chose to work with namely, The Coalition of Essential Schools, was one that is known for its high quality, easy access and on-going training. Fullan calls these “characteristics of change” (2001 p. 72). The school also possessed positive “local characteristics” in that it had support at multi-levels ranging from the community through the principal. (2001 p. 72). Finally, Brookville High chose to implement a change with sufficient “complexity” which resulted in “greater change because more (was) being attempted...and (this) stimulated more teacher change (while) demand(ing) more effort” (2001 p. 78).

Fullan’s Basic Guidelines to Successful School Change

In sum, Fullan identifies ten “do and don’t assumptions as basic to a successful approach to educational change” (2001 p. 108). The success of the Quest Program in Cohen’s research can be attributed to the school’s adherence to virtually all of Fullan’s suggestions. First of all, there were no assumptions about the change prior to it. In other words, the teacher who implemented the program “assumed that successful implementation (would) consist of some transformation or continual development of initial ideas” (p. 42). Second, there were specific teachers who carried out the

implementation of the program and created their own meaning of it through reflection during the process just as Fullan suggests in his second of the ten “do’s and don’ts.”

Third, the participants accepted and worked through conflict and disagreement with the assumption that they were “inevitable and fundamental to successful change” (Fullan, 2001 p. 108). Fourth, there was consistent “pressure to change” for the implementers of the Quest Program both from within the school structure, in the form of peer pressure and administrative expectations and from the outside community including parents and lawmakers (2001 p. 108). Fifth, the process outlined in Cohen’s study took place over the course of four years supporting Fullan’s theory that “effective change takes time” (2001 p. 109). Sixth, the teachers implementing the change did not assume that the resistance they saw was the result of simple “rejection of the values” inherent in the change (p. 109). They accepted and assumed a number of reasons for rejection. Seventh, there were “no expectations” for more than the volunteering teachers “to change” (2001 p. 109). The increase in numbers of supportive teachers came of an interest in the continued growth and success of the Quest Program. Eighth, the Quest Program followed a plan addressing key factors known to affect implementation (2001 p. 109). Ninth, there was an assumption of lack of clarity throughout the process, supporting Fullan’s theory that “no amount of knowledge will ever make it totally clear what action should be taken” (2001 p. 109). And finally, tenth, Brookville High set out to “change the culture of the institution” with its program, not necessarily “implement a single innovation” (2001 p. 109).

“Change is filled with mystery and revelation as well as danger and opportunity” (Conner, 1992 p. xx). Michael Fullan provides a lens through which to “see” change; a

vehicle that allows us to simplify the chaos of a dynamic process which by nature is in constant flux. What compounds the difficulty of creating successful change in schools is that the partner to change is people, in this case predominantly teachers; and, people are nothing if not dynamic and in a state of constant flux. When one considers this idea in light of the work of the school teacher, the difficulty of school change becomes apparent. In an article written by Judith Newman reflecting on her research asking what makes change so difficult, she writes, “Change in education comes about only when teachers are helped to change themselves. Talking about ‘school reform’ (change) makes no sense, for there is no such thing as ‘school’ reform. Schools are made of bricks and steel, and they don’t reform themselves. It’s the people, the teachers and administrators who live and work in schools, who change or don’t change” (1998 p. 13). Schools are an institution whose “product” is people –ideally successful, contributing members of a democratic society. In the next section of this paper, I will address the nature of the work of the teacher in an effort to reveal the second of three core elements involved in school change: the process of change itself, the work of the teacher and the culture of the school and its institution.

Part 2: The Work of the School Teacher

The Personal Process of School Change

In order for successful school change to happen, teachers and other school personnel must alter their belief systems. This is no small task. Peter Senge, a leading business and education consultant puts the “deep learning cycle” at the center of a concentric circle identifying “skills and capabilities, awareness and sensibilities and attitudes and beliefs” which outlines the changes that need to happen at an individual level in order for systemic change to take place. (2000 p. 26). Similarly, Robert Quinn, a leading business consultant writes, “deep change differs from incremental change in that it requires new ways of thinking and behaving. It is change that is major in scope, discontinuous with the past and generally irreversible. The deep change effort distorts existing patterns of action and involves taking risks. Deep change means surrendering control” (1996 p. 3). Given the difficulties of individual change, it can be said that teachers experience considerable stressors when asked to take on educational change. Before I address three predominant factors affecting teacher change: teacher workload, teacher isolation and the pervasive effects of teacher uncertainty, I will first discuss the nature of personal change and the specific factors of classroom teaching that interfere with it.

There is a considerable amount of research and theory supporting that teachers are reluctant to change (Evans, 1996; Fullan, 2001; Hargreaves and Dawe, 1990; Huberman, 1993). For example, Mary Kennedy (2005) and Andy Hargreaves (2004) each conducted research looking at the cognitive and emotional reactions of teachers to school change. Mary Kennedy writes,

Teachers hold a number of important beliefs that are relevant to teaching- beliefs about the nature of school subjects and what is important to learn about them, about how students learn and what motivates them, about how teachers influence students, and so forth. Researchers who have studied teachers' beliefs (Kagan, 1992; Kennedy, 1991; Pajaras, 1992) have identified their relevant features: they tend to be very durable and resistant to change; they are part of an internally consistent network of ideas, a factor that also makes them resistant to change; and they are used to filter and interpret new experience in a way that reinforces the beliefs instead of challenging them (p. 13).

Hargreaves provides data to support reasons that teachers are resistance to change. His results reveal that teachers find change “entail(s) abandoning all the familiar routines and relationships,” and the “changes that teachers and other adults encounter are accompanied by profound feelings of loss” (2004 p. 288). In other words, not only are teachers, through their belief systems and training, resistant to change; but also, teachers find that change is a difficult individual and psychological process. Thus, when we talk about change in education, it is imperative that we consider the extent of personal energy that every teacher expends when he or she embraces it.

Furthermore, Senge purports that for educational change to happen everyone (teachers, administrators, parents and students) must be actively involved; yet, this is still an ideal rather than a reality in today's schools. Robert Evans echoes Senge when he writes, “but how many of the nation's classrooms are ultimately restructured will depend on how many of the nation' educators make the necessary changes in practice and beliefs

–a vast process of adaptation that must be accomplished teacher by teacher, school by school” (1996 p. xi).

Because teachers are the implementers of classroom school change (whether it be curriculum related or method) they bear a heavy burden, and “changing” is a deeply personal and difficult process. Equally, teaching is complex, demanding, and at the whim of day to day life. Michael Huberman describes this situation as ‘the classroom press.’

-The press for *immediacy and concreteness*: Teachers engage in 200,000 interchanges a year, most of them spontaneous and requiring action.

-The press for *multidimensionality and simultaneity*: Teachers must carry out a range of operations simultaneously, providing materials, interacting with one pupil and monitoring the others, assessing progress, attending to needs and behavior.

-The press for *adapting to ever-changing conditions or unpredictability*: Anything can happen. Schools are reactive partly because they must deal with unstable input –classes have different personalities from year to year; a well planned lesson that may fall flat; what works with one child is ineffective with another; what works one day may not work the next.

-The press for *personal involvement with students*: Teachers discover that they need to develop and maintain personal relationships and that for most students meaningful interaction is a precursor to learning (1983 pp 482-483).

Also this responsibility for change and the “classroom press” are further complicated by societal pressure on teachers to do more than is realistically possible. In his publication, *Teaching in the Knowledge Society Education in the Age of Insecurity*, Andy Hargreaves (2003) speaks to the immense difficulty of being a teacher in our current society.

Teaching is a paradoxical profession. Of all the jobs that are or aspire to be professions, only teaching is expected to create human skills and capacities that will enable individuals and organizations to survive and succeed in today’s knowledge society. Teachers, more than anyone, are expected to build learning communities, create the knowledge society, and develop the capacities for innovation, flexibility and commitment to change that are essential to economic prosperity. At the same time, teachers are also expected to mitigate and counteract many of the immense problems that knowledge societies create, such

as excessive consumerism, loss of community, and widening gaps between rich and poor. Somehow, teachers must try to achieve these seemingly contradictory goals at the same time. This is their professional paradox (p. 9).

Classroom teachers are in a difficult place. There is a need for change in the schools and the responsibility for this lies predominantly with the teachers. However, not only is change particularly difficult for teachers due to their belief system, training and nature of day to day life in the classroom; but also, there is considerable and unrealistic pressure for teachers to fix the ills of our society.

In the following pages, I will describe three characteristics of the work of the teacher that research has shown to negatively impact the successful implementation of school change: overwork, isolation, and “technical uncertainty” which leads to a lack of self-efficacy. I will begin with the effects of teacher overwork. I will follow that with a discussion of the impact of teacher isolation on the individual change process. I will continue with an explanation of “technical uncertainty” and the related problem of teacher lack of self-efficacy. Finally, I will synthesize these components to show how they feed an already unstable process of change.

Teacher Overwork

There is little argument that teachers have more to do than there is time in which to accomplish their work. In fact, there is an acute sense of overwork in the teaching profession. It should be no surprise then that many teachers find that there is little time to devote to the investigation and study of potentially beneficial changes in their practice or in the educational institution itself. Teachers already feel as though they don't have enough time to do all that is already asked of them in their daily practice.

When combining “teacher time” with “overwhelmed” as key words in several education databases I found that researchers agree there is a sharp imbalance of teacher time and teacher workload (Fullan, 1991; Hargreaves and Giles, 2006; Kennedy, 2005; Newman, 1998; Senge, 2000; Wagner, 1994). In addition to daily lesson preparation (the average teacher is responsible for creating 3 lessons per day –some more) and both formal and informal student assessment, virtually all teachers are required by contract to take on extra-curricular duties ranging from monitoring hallways in between classes to coaching student athletic teams. This, in addition to constant daily interruptions, a national trend toward larger class sizes, and an increase in the “social work” aspect of the profession is the reason for the growing “professional malaise” within the profession (Wagner, 1994 p. 63). Combine this workload with increased teacher responsibility for student safety because of the events of 9/11 as well as the rise of school shootings, and an increase in teacher accountability through the No Child Left Behind Act of 2001 and we have a teaching situation whose workload is next to impossible.

Tony Wagner (1994) found that “large numbers of teachers appeared too weighed down by their own professional malaise to consider how to respond to the increased emotional needs and demands of the students” (p. 63). This validates Fullan’s argument that “teachers and principals are dangerously overloaded. More social work responsibilities, greater accountability and having to deal with a wider range of abilities and behaviors in their classrooms are now all part of the teachers’ ‘lot’” (1991, p.4).

Peter Senge describe the reasons for the professional malaise with this,

There is also a sense of lightening striking from outside. Six parents have already left messages for you to return their calls. The local newspaper just reported test scores for every school in the region. The assistant superintendent just returned from a curriculum conference bursting with ideas. You would be happy to work

on the new curriculum committee if there were time in the day, but your planning periods have been cut. The school board has chosen new textbooks and rearranged the bus and cafeteria schedules; they're talking about adding five or six extra students to each class to save money (2000, p. 101).

Given this description, it is important to remember that it is with this daunting work load that most teachers approach change.

Mary Kennedy (2005) began her study looking at the reasons for teacher resistance to school change with this hypothesis, "the problem may lie in the teaching situation itself. The argument (being) that circumstances place so many constraints on teachers that they cannot rise above these circumstance to create the kinds of practices that reformers want to see" (p. 15). Her findings support her hypothesis. Among other things, Kennedy particularly found that the workload teachers carry make change next to impossible.

Teachers appear to have very little time to prepare their lessons and were often pulled from one thing to another. They worked at home in the evenings and forgot to bring their work products with them in the morning. They monitored students in the hallway and then hurried to class without time to compose themselves before teaching (p. 232).

Judith Newman would agree with Kennedy. In the same article which supports that the onus for change is predominantly on the shoulders of teachers, *We Can't Get There From Here: Critical Issues in Reform*, Newman writes,

Life in the classroom is life in the fast lane. Given the way most classrooms and schools are structured these days, interruptions are common. Teachers and students have to run fast just to stay in place. By the end of the day most people are just too tired to take courses, read professional articles, or write brief reflections in a journal (1998, p. 8).

In addition, Andy Hargreaves with Cory Giles (2006) describes the impact teacher overwork has on a “knowledge society school” in a case study he conducted in Ontario. He defines knowledge society schools as those that are working to embrace the current trends toward “economies (which) are stimulated and driven by creativity and ingenuity (p.1). In his study, the school was experiencing the loss of its lead in this genre of school largely due to an imbalance of teacher time and workload. “Work overload, shortage of time, and the unstoppable pace and astounding scope of imposed reform have seriously affected the decision-making processes at Blue Mountain” (p. 148). If overwork seriously affects decision making in our schools, how can we expect to achieve positive school change in our schools?

Teachers are tired. In the profession, demands far exceed resources –especially the resource of teacher time. It can be argued that teachers are already compromised in affording the time and energy to do an effective job at educating our youth. Add to that the constant demand for school change which in itself requires enormous amounts of energy.

Teacher Isolation

“We have found that the single factor common to every successful change initiative is that *relationships* improve. If relationships improve, things get better. If they remain the same or get worse, ground is lost” (Fullan, 2001 p. 5).

The ever-present pressure of teacher overwork complicates an already tenuous situation in public education with regard to change. Teachers have little or virtually no time for collaborating with other teachers. Tony Wagner illuminates some of the aspects

of the demands on teachers in their day to day work in his 1994 book, *How Schools Change*. He found the predominant factor inhibiting successful school change is teacher isolation. His qualitative study looking to better understand the process of school change revealed that each of three schools in his study found measures of success to school change but the varying degrees of success were, in part, due to the differences in teacher to teacher contact time. Isolation was a predominant factor in the schools where the change implementation was less successful or more difficult to institutionalize.

Wagner's findings on teacher isolation are not new to the field of educational research. Michael Fullan cites widespread isolation as a reoccurring problem in the drive to create change in schools, "The problem of isolation is a deep seated one. Architecture often supports it. The timetable reinforces it. Overload sustains it. History legitimizes it" (1991 p. 6). In fact, there have been studies revealing teacher isolation as a problem in the profession since as early as 1975 with Dan Lortie's, *School Teacher*. Both Huberman (1988) and Lortie address the idea that teachers elect into the profession with autonomy in mind thus increasing the factor of teacher isolation. This self-selection into an autonomous and individualistic profession attracts people who may be pre-conditioned for isolation in their work. Thus, even from the earliest stages of the career, teacher isolation is pervasive (Bell and Gilbert, 1994; Blasé, 1988; Bryk and Schneider, 2002; Evans, 1996; Hargreaves, 1993; Little, 1990; Lortie, 1975; Rosenholtz, 1989; Senge, 1990; Webb, 1985; Westheimer, 1998).

Michael Huberman asks the question, "why so little of working together appears to be going on at the present end and, when it has gone on, why it seems so difficult to sustain" (Little, 1993, p. 12). He experiments with an answer to that question in his

article entitled, *The Model of the Independent Artisan*, where he compares the work of the teacher to that of a craftsman.

Let us imagine, for a moment, the classroom teacher as tinkerer or an instructional handyman, a do-it-yourself craftsman who can put to use a host of materials lying around at various stages of a construction or repair job. Unlike, say, an engineer, a teacher works seldom with predesigned materials or tools. Nor does a teacher start with a blueprint, but rather reaches for some scrap or surplus material from previous jobs as a project takes shape. These materials meet the particular need that emerges at a specific point and are fashioned to fit this particular purpose. Gradually, of course, the teacher “craftsman” accumulates a workshop full of materials most likely to be needed at some still unknown moment for the kinds of things he or she builds or fixes (Little, 1993 p. 14).

Huberman argues that teachers’ work is so individualized, so based on intuitive experience and reactive that it makes sharing work and talking with other teachers about the classroom extremely difficult. Couple this with the fact that teachers are used to working alone, much like artists, and do not have a great deal of practice at working on a professional basis with adults and teacher isolation takes on a new dimension.

The Lack of Self-efficacy

In the same manner that teacher overwork is a predominant cause of teacher isolation, teacher isolation is a contributing factor of another pervasive problem within the teaching profession that impacts the change process: The nature of teachers’ work is erratic. There are few constants within their job. The students are always changing requiring different approaches to teaching any given curriculum; the administration is frequently changing requiring different approaches of working with a number of variables; and the curriculum itself is frequently in flux requiring learning potential new skills and teaching topics. This lack of consistency often leads to a lack of feeling of self-

efficacy on the part of teachers. Susan Rosenholtz identifies this as teachers' "technical uncertainty" (1991).

To describe the conceptual theme of technical uncertainty, Rosenholtz writes, A technical culture is labeled uncertain if the outcomes of work are highly unpredictable; where, because of the variability in their students, for example, teachers do not reach automatically for solutions to the myriad learning problems they confront. Uncertain means there are few well-established techniques – codified technical knowledge- to help teachers meet students' widely varying needs (p. 4).

In other words, teachers lack a concrete set of instructions for success. These instructions don't exist because the profession of teaching is not concrete in nature. And without a feeling of efficacy about one's work, it is unlikely for any teacher to embrace change within that work.

In her study, Rosenholtz (1989) also identified other contributing factors to teacher uncertainty. Other researchers and scholars agree, the factors constraining teacher efficacy are staggering (Ball and Goodsen 1985; Evans, 2001; Hargreaves, 2003; Hopkins, 2001; Lortie, 1975; Webb, 1983). For one thing, a result of teacher isolation is a certain insecurity that comes of simple human nature. Because teachers don't have the time to observe one another, their inclination is to assume their colleagues are better teachers than themselves. "For many the conditions of their employment promote an attitude of professional non-involvement with peers. Such conditions engender feelings of insecurity, status panic and self protection through isolation and promote a form of alienation that social-psychologists have called self-estrangement" (Webb, 1983 p. 85).

Another common cause of lack of efficacy in their work is a lack of feedback from administrators, community members –including parents- and colleagues. "Because teachers have difficulty assessing their classroom accomplishments and receive little

recognition from the community, colleagues or administrator, their professional self-esteem is kept in continual jeopardy” (Webb, 1983 p. 84).

Finally lack of self-efficacy is elicited by, across the nation, constraining financial resources which allow for a minimal support system for teachers with particular focus on teacher remuneration. “They (teachers) come with the hope that they will earn an adequate income, but they find that their salaries are not keeping pace with inflation and that the pay of many blue-collar workers equals or exceeds their own” (Webb, 1983 p. 81).

The *British Journal of Educational Psychology* published a study conducted in the Netherlands relating teacher burn-out and self-efficacy. The results of the study linked a lack of self-efficacy due to feelings of overwork with a decreased inclination to change. “The more lessons teachers give weekly, the more they suffer from emotional exhaustion, and the less they are convinced of their capacities to stand up to the stress innovative changes are accompanied with” (Will et al, 2002 p. 234).

Joseph Blasé reports similar results in a study of teacher socialization. He “examine(d) the teachers’ perceived vulnerability to others and how this vulnerability contributes to the development of a ‘conservative’ (passive) political work experience” (1988 p. 125). His findings are not surprising. Due to a lack of self confidence, teachers are not inclined to be dynamic within their profession. In other words, “cutting edge” is rare in our nation’s schools. Due to feelings of low self-efficacy, prompted by varied sources, teachers in both studies were less likely to embrace changes in their practice.

Teacher overwork and teacher isolation are also contributing factors in this identified teacher lack of self-efficacy. Furthermore, the decreasing status of the work of

the teacher fosters a lack of self efficacy. Teachers provide an easy target for the social and economic ills of a country in a perceived slump. It is easy to understand the falling status of teachers during a time when the information age transforms the world as we see it at a rapid rate. “They (teachers) have been portrayed by commentators and critics from a variety of political persuasions as having failed to recognize or service the changing needs of society” (Ball, 1985 p. 3). This lack of support on both a national and local level has had a negative impact on the self-concept of the average teacher. Without the ability to feel a sense of effectiveness in their work, it is no wonder teachers appear to lack the attributes necessary to create change in schools.

Teachers are faced with varied and numerous obstacles to feeling as if they “do a good job.” Lack of feedback, pay, and professional relations within a work environment that is always changing makes it difficult for teachers to foster a strong sense of self-efficacy. Predominant feelings of self doubt within the profession contribute to a national teaching staff that is more inclined to maintain the status quo rather than risk personal and professional growth resulting in school change.

Given the “deep individual change” that researchers and scholars identify as needing to happen in order to facilitate successful school change and combining this with the forces conspiring against the work of the teacher, the lack of success in school change attempts begins to become clear. Teachers are overworked, isolated, and because of these and a number of other stressors, teachers are experiencing feelings of low self-efficacy. All of this contributes significantly to the common occurrence of perceived lack of change in our public schools.

The picture of the work of the teacher is indeed dismal when looking to make change happen in schools. Perhaps equally discouraging are the effects the institutional context and individual school cultures have on the teacher. It would seem the public education system is designed for homeostasis.

Part 3: The Institutional Context and the Culture of Schools

There is a delicate balance in the reciprocal relationships between school systems, schools, and teachers. While school systems and individual schools are driven by the teachers who work in them; equally, teachers are driven by the school systems and individual schools in which they work. I have identified the key factors which affect the individual teacher's general resistance to change: work overload, isolation in the profession, and "teacher uncertainty" or a lack of self-efficacy. This general teacher discomfort with change impacts on a school's "culture" and this culture of resistance to change is also perpetuated by the public school system itself. In the following section I will address the nature of the institution of public school and its relationship to change as well as the school cultures that influence the change processes. I will begin with a discussion of the institutional context of schools and then move to a discussion of the individual cultures of schools in an effort to bring clarity to the impact these two components have on school change.

The Institutional Context of Schools

The national public school system is a huge institution with varying people and governmental bodies which have input and control over it. These influences tend to take away from the power and knowledge of the classroom teacher. Furthermore they are also holding the classroom teacher at increasingly higher levels of accountability. This trend is a direct result of a rapidly growing competitive global market and a lack of global stability. I will address the issues of institutional change, teacher accountability due to a rise of control in governing bodies, and a national conservative trend which is affecting the institution further in the following section.

Resistance to change is a natural occurrence of any organization. Clayton Christensen, Sally Aaron, and William Clark write, “the primary driver of an organization’s capabilities are its processes. Processes are the patterns of interaction, coordination, communication, and decision making that employees use to transform resources into products and services of greater worth... Established organizations struggle to abandon existing processes for new ones because processes are normally developed over time and are rooted in past successes” (2005 p. 546). This is especially true of the processes found in the education system. The public education system and its individual schools and school districts are constrained by a lack of resources in terms of both time and money. They are top heavy in management: school boards, local and state mandates, tax-payers, a two or three tiered administration system; and, their “product” is people as opposed to a good or service. Christenson, Aaron and Clark propose that in order for any organization, including public schools, to change they must literally reinvent themselves. Unfortunately, the authors also propose that schools are unable to

do that. “Understanding the education system’s capabilities in the context of the resources it has and the processes it employs reveals formidable obstacles to reinventing schools” (2005 p. 548).

Since the “No Child Left Behind Act” enacted in 2001, public education has been forced into a narrow alley of method and curriculum. With teacher accountability in its “highly qualified” standard, and the push for higher student test scores there has been a decrease of flexibility in the classroom. Andy Hargreaves (2003) writes,

instead of fostering creativity and ingenuity, more and more school systems have become obsessed with imposing and micromanaging curricular uniformity. In place of ambitious missions of compassion and community, schools and teachers have been squeezed into the tunnel vision of test scores, achievement targets, and league tables of accountability (p. 1).

The increased Federal Government regulations on public schools have limited the opportunities to creating change in schools and the jury is out as to whether or not the No Child Left Behind Act is improving student learning.

Equally, in a trickle down effect, the increasing top-down management trends in public education decrease the incentives to change in the schools. There is greater accountability on school district levels as they compete against one another for higher local newspaper-published student test scores. Jobs are on the line, both administrative and teacher, but because of the public nature of the public school system, change seems not to be the answer. Again, Andy Hargreaves (2003) writes, “organizational change theorists usually describe the age we are in as one of uncertainty, complexity or risk” (p. 42). This pervasive doom and gloom mood creates more of an atmosphere of competition and fear than that of risk taking and problem solving in today’s public school systems.

In his 2002 preface to *Schoolteacher*, Dan Lortie writes, “it seems that in our educational planning, we tend to rely too heavily upon the idea that all situations should be administered in the same way” (p. xiv). This conservative trend may be due to the rise of global competition and the accompanying feeling of uneasiness within the nation. Sally Power and Geoff Whitty in *Market Forces and School Cultures*, describe globalization as marking “a fundamental break with the past and the arrival of qualitatively different conditions. ... As capital becomes more mobile, nations lose control over economic activity” (1999 p. 16). In this rise of insecurity, unfortunately rather than looking to the individual schools to rely on the expertise they have of the student body, the community, and local effects of globalization, there is a compelling push to look to the “experts,” who invariably are federal, state, and administrative “authorities.” This feeds the cycle of mandated changes managed by some far removed institutional body which reduces the likelihood of real and valuable school change.

It is within this cycle that teachers work. It is clear that change is necessary in the public schools, and by the very nature of their proximity, teachers potentially have the greatest knowledge of what changes are needed and how we might create them. Unfortunately, what teachers are predominantly experiencing is loss of control with regard to what is being taught in the classroom and how it is being taught; top-down management with Federal Government imposed high stakes; and the effects of being the scapegoats for the perception that our schools are currently failing our society.

While by their nature, all organizations resist change, teachers work in a national organization that is particularly resistant due to its sheer size and number of government bodies that oversee it. In an increasingly unstable and competitive world the response of

these governing bodies is to take more control thus reducing the classroom teacher's control and flexibility while simultaneously increasing her accountability. The negative impact of these increasingly conservative influences not only affects individual teachers. It affects the culture of teaching and in this way, the culture of individual school buildings.

The Culture of Schools

It is no wonder then that more often than not, individual school cultures are not conducive to change. Teachers, already working in a difficult profession, are sandwiched between the difficulties of day to day work and the pressures of an uneasy society and consequential increased state and Federal Government mandates. The professional culture of every school consists mainly of teachers with a smattering of administrators and paraprofessionals. This makes teachers, by number, the most influential group in creating a school culture which is either conducive to changes or not. The effects of a school culture on change can be very powerful, whether for its positive or negative influence. In fact, a school culture directly affects the factors affecting the personal change of teachers: overwork, isolation, and a lack of self efficacy. In the following pages I will address several studies which show the relationship between the culture of individual schools and teacher change.

“School culture affects every part of the enterprise from what faculty talk about in the lunch room, to the type of instruction that is valued, to the way professional development is viewed, to the importance of learning for all students” (Deal & Peterson

1999). Culture itself is the composite of every individual working within the same organization. It is shaped by the beliefs and actions of the belonging individuals as well as the norms of the organization or institution and the surrounding community. “Schools are networks of sustained relationships. The social exchanges that occur and how participants infuse them with meaning are central to a school’s functioning” (Bryk, & Schneider, B., 2002, p. xiv). Because of these influences, in the case of schools, individual cultures can vary drastically.

Anthony Bryk and Barbara Schneider in their 2002 text, *Trust in Schools*, present three case studies of elementary schools in Chicago. Bryk and Schneider’s aim was to better understand the influences of a positive school culture (including that of the parents) on change within the schools. The results of their work indicate the importance of school culture on effecting positive school change in order to improve academic achievement. The researchers measured four key “organizational conditions affected by relational trust” (2002 p. 115). The first is “orientation to innovation” which indicates teacher attitude toward professional learning and change. The second is “outreach to parents” and its effectiveness of engaging parents in their children’s learning experience. The third is “professional community” which “assesses the collaborative work practices of teachers and the normative controls guiding their work” (2002 p. 118). And the fourth is teacher commitment to school community. The authors found “strong statistical evidence linking relational trust to improvements in student learning” and that “the pattern of results proved highly consistent across all four organizational outcomes” (2002 p. 115 & 119).

In other words, if the culture of a school and its surrounding community of parents is high in “relational trust,” positive change is more likely to occur in the classroom thus affecting student learning outcomes. Bryk and Schneider put it this way, “trust fosters a set of organizational conditions, some structural and others social-psychological, that make it more conducive for individuals to initiate and sustain the kinds of activities necessary to affect productivity improvements”(2002 p. 116).

In fact, Bryk and Schneider’s results resonate strongly with those factors that act as barriers to school change. They write, “first, relational trust reduces the sense of vulnerability that school professionals experience as they are asked to take on the new and uncertain tasks associated with reform” (2002 p. 116). This outcome supports Susan Rosenholtz’s findings that teacher uncertainty limits productive school change. “Second,” Bryk and Schneider write, “the presence of relational trust among a faculty allows it to coalesce as a professional community where teachers can undertake genuine collective work together” (2002 p. 116). Their findings here address issues of teacher isolation. Teachers are more inclined to take risks and try new ideas when immersed within a professional community. A sense of community provides safety within which teachers can feel more comfortable implementing new methods and strategies in the classroom. “Third, relational trust under girds the highly efficient system of social control found in a school-based professional community. When professional standards are clearly understood and widely shared, the resultant organizational norms strongly order day-to-day work, yet teachers still sense considerable autonomy and mutual support for their individual efforts” (2002 p. 117). The result here speaks to teachers’ ownership and sense of control of curriculum and method. Bryk and Schneider purport that the loss

of control felt among teachers due to increased government mandates can be assuaged through positive relational trust. Finally, “relational trust creates a moral resource for school improvement” (2002 p. 117). Feeling a sense of moral commitment increases ones sense of self-esteem and self worth. It affects the teachers’ sense of professional abilities and societal need for their work. This directly correlates to the scapegoat effect commonly experienced by teachers.

The idea of norms of collegiality affecting the culture of the workplace for teachers is not a new one. As early as 1982, Judith Warren Little conducted a one year study of “six urban, desegregated schools” looking at the social organization of the workplace for teachers in order to identify norms that support improving practice through active pursuit of professional development (p. 325). Her focused ethnography “sought insight into staff development’s contribution to school success” and “what aspects of the work setting or of the staff development programs had limited the programs’ influence on school success” (1982 p. 326).

Her findings are similar to those of Bryk and Schneider in that they support the idea that factors of isolation, lack of control of curriculum and method, and a sense of teacher vulnerability diminish the effects of creating positive school change in order to increase student achievement. She writes, “Schools are distinguished from one another by the interactions that are encouraged, discouraged, or met with some degree of indifference” (1982 p. 331). Given that culture is predominantly the way members interact with one another and over what topics, it is easy to see Little’s results in the light of school culture. “Not surprisingly, situational norms supporting professional

development are built and sustained over time by the words and deeds of staff” (1982 p. 337).

She found that certain norms either encourage or discourage professional “learning on the job,” depending on what area of the continuum behavior rests (1982 p. 328). In successful schools, she found that teachers “appear to have built what Lortie (1975) terms as a ‘shared technical culture’” (1982 p. 334). This in other words is the reciprocal “cultivation of precise and concrete talk about teaching” and its effects reduce feelings of isolation, lack of control in the classroom, and, if done within a system of “support,” feelings of teacher uncertainty and vulnerability (1982 p. 334).

The results of both Bryk and Schneider and Little’s studies provide concrete support for another researcher, Louise Stoll’s, professional (based on prior research) opinion that, “school culture is one of the most complex and important concepts in education. (However) in relation to school improvement, it has also been one of the most neglected” (1999 p. 33). Stoll along with Dean Fink identified ten “cultural norms that influence school improvement” (1999 p. 36). Similar to Bryk and Schneider and Judith Warren Little’s findings, Stoll and Fink’s first three cultural norms speak to teachers’ sense of professional community as an antidote to isolation: “shared goals, responsibility for success, and collegiality” (1999 p. 37). Stoll and Fink’s identified norms of “continuous improvement, lifelong learning and risk taking” allow teachers a sense of ownership and moral commitment virtually robbed of them because of government reaction to the pressures created by the current global market (1999 p. 37). And finally, Stoll and Fink’s norms of “support, mutual respect, openness and celebration and humor” address Rosenholtz’s identification of teacher uncertainty and sense of vulnerability. In

sum, “healthy and sound school cultures correlate strongly with increased student achievement and motivation, and with teacher productivity and satisfaction” (Stolp, 2004 p. 2). This translates to a faculty which has the tools, skills, and environment necessary to create positive school change despite many and varied obstacles within the profession as a whole.

Of course not all school cultures have the norms identified by the researchers discussed above. These norms are the ideals for which most schools strive- or ought to. Instead, many, if not most, school cultures fall on a continuum of culture between improving and declining or, as identified by Rosenholtz (1989) “moving and stuck” schools. Stoll and Fink (1999) set this continuum from moving to cruising, and strolling to struggling and sinking. In terms of school culture, most schools fall in the middle of this continuum, though many fall toward the struggling and sinking end of the continuum.

In Judith Warren Little’s ethnography discussed above, the findings show “characteristics of work practices” that either sustain or inhibit “school-wide norms that support continuous improvement” (1982 p. 329). The predominant characteristics she found within the six schools did not lend themselves to promoting a culture of improving practice or supporting positive change in the school.

There appear to be prevailing patterns of approved and disapproved interactions... Lending and borrowing materials and asking for occasional advice are favored modes of interaction in all building, but advocating the adoption of a new idea is acceptable in just four of six schools and is actively encouraged by teachers in only one school. Extensive discussion of teaching practices ensues in three faculty lounges, but typically stops short of any invitation to observe. Teachers in five buildings spoke of their willingness to work together to resolve problems related to student behavior (e.g., being late to class), but in three of those building they were hesitant to take a collective stand on interpreting curriculum in the classroom (1982 p. 331).

Certainly a school culture that is open to change by creating a professional community of teachers is no elixir to the current lack of needed school change across the nation; however, given the results of the research studies discussed above, a positive school culture can provide an environment that reduces teacher vulnerability, and isolation, and helps to increase a teacher's sense of self worth. A school culture where teachers feel comfortable taking risks, talking about practice, and sharing their work also addresses teachers' recent and common frustration of a lack of ownership of what curriculum is taught in their classrooms as well as how it is taught. Perhaps a good starting place in regard to promoting needed change in the classroom would be to improve individual school cultures and this begins with an examination of the role the individual teacher plays within the change process.

Summary

Though we seem to be mired in a world of contention, there is little argument that our schools need to change in order to provide students with the knowledge, skills and dispositions needed for the global conditions of the twenty-first century. It is also agreed that our students need to be prepared to compete in a global market in an increasingly small and multi-cultured world which faces collective environmental and energy problems. What is at stake, however, is how schools need to change, and more urgently, why they are not changing in response to continued, varied and unrelenting change forces and attempts.

The teaching profession has always been a public one. Since the days of the one room school house and the female teacher who was not allowed “to keep company with men” to the current environment where a teacher must, “embody responsibility and be ‘on’ always” teaching has been more than a job (Beaudoin & Taylor, 2004 p. 16, 17). Teaching is a way of life in which teachers are accountable to their communities and nation on numbers of levels. Because of this, teachers are held responsible for the perceived current lack of change in schools.

This responsibility is huge. Change itself is multi-faceted, unpredictable, dynamic and not easy to track or measure. Even in attempts to put parameters on it, theorists agree that it is nothing short of chaotic. According to Michael Fullan and others, there are five types of change: each occurring in three phases consisting of three components and the overlap of types, phases and components is a given. Change is nothing if not idiosyncratic and even without any other problematic factors, change itself is difficult to accomplish.

Thus, the responsibility of change on the shoulders of teachers is heavy. Couple that with the day to day and professional difficulties inherent within the practice and you have a recipe for disaster. Asking any individual to change is an enormous task. Asking a teacher to change when she is already experiencing issues of overwork, isolation and technical uncertainty is mammoth.

Furthermore, teachers do not work in an environment susceptible to change. The institution of public education is fraught with seeming micromanagement on many levels. Public education is accountable to the federal, state and local governments; it is asked to prepare students for an unstable and uncertain global workplace; and, there is little

agreement that any given proposed change provides what is needed for this workplace. This description is only the beginning of the environment in which teachers work.

In part due to the lack of trust and respect for the profession of teaching on a local, state and national level; individual schools themselves lack an environment conducive to change. There is little time for teachers to work together. Teachers frequently experience a sense of vulnerability which leads to a lack of sharing, risk taking and collegial trust. These components lead to a school culture within which the likelihood or ease of change is very little. In fact, though school cultures that support teacher collegiality, trust and shared work do exist, they are few and far between.

Given the results of this review of the literature, the reasons behind the lack of perceived change in the schools becomes clear. Change is difficult. The work of the teacher is complex and tricky and the environment of the school system on both a systemic and building level is not favorable for change.

With a greater understanding of the change process, the work of the teacher and the institutional and building level cultures within which he works, a study of the impact the individual teacher has on the change process within his building can provide insights into the micro-level of change. It is important that we get a base of how individual teachers behave within the change process in order to appreciate what modifications might be made at the foundation of the process. This is where my study begins.

CHAPTER 3

METHOD

Conceptual Framework

Rossman and Rallis see the case study as “in-depth and detailed explorations of single examples... to understand the larger phenomenon through close examination of a specific case” (2003, p. 104). This study examines the phenomenon of the change process of individual teachers within the bounded context of their classrooms. I ground my research in a case study approach. It is an “intensive, holistic description and analysis of a single ... phenomenon... and an end product of field oriented research” (Merriam, 1998, p. 27).

Within this case study approach, I borrow from the underpinnings of phenomenological theory. Looking at the conditions of change and the participants’ lived experiences of it, this study employs a psychological approach to find the meaning in several individual experiences of change. This information will be sculpted using intentionality of consciousness to understand the meanings individuals attach to the change process and to look at how the participants’ actions are influenced by their concepts of the change they are experiencing.

This qualitative genre lends itself well to the focus of this study –individuals’ experiences of change in classroom methodology. By taking a close look at several high school technology education teachers who are implementing change in their classrooms through the use of new methodology, the underpinnings of the nature of change as experienced by classroom teachers will become clear. This study will attempt to identify

the problem of change in the classroom in order to better facilitate a solution to the predominant lack of it in American classrooms.

Program and Participants

Twin River Technical Center set in rural New England is a public secondary school serving public high school students from 5 sending schools and covers a geographic area of about 450 square miles across two states. It has 18 teachers and a range of courses including carpentry where the students actually build and sell a house, to law and safety from which students leave certified to fight fires or enter police academies. Its mission statement emphasizes the “changing workplace” while helping students to become lifelong learners with the “skills, knowledge and character” to become productive workers through “applied learning”. Three years ago, the center hired a new headmaster whose progressive philosophy and collaborative sense of leadership has brought the faculty to the consideration of new ideas of classroom methodology.

Riverfield, Vermont is set in south central Vermont on the border of the Connecticut River and thus New Hampshire. Its population of around four thousand consists of mostly white working class families, with 3.7% of the population identifying as non-white (Rutland Herald, 2009). Many of the town’s residents have roots in the town from its inception in 1761. Riverfield’s identity is still based in its hay day of World War II when its production of machine tools caused it to be rated as the seventh most important bombing target in the country. Today, the town still has several factories which keep it going, but its rate of poverty is quite a bit higher than the state average with ten percent of its population living at or below the poverty level.

I chose this town and school for three reasons. First of all, the town is representative of a majority of schools across the nation which are often overlooked from a research perspective and a political one. Second, the teaching staff at Twin River Technical Center has a diverse range in terms of age and experience in the classroom. And third, the Twin River Technical Center is a school on the edge of change as it is currently in year one of its implementation of the Critical Skills Classroom Model which is a problem-based approach to student learning within a classroom community of learners.

The students served by the TRTC are those that are most likely to take on the “middle class” jobs of the 21st Century many of which are, according to Thomas Friedman in *The World Is Flat*, “becoming fungible” (p. 278). The students who are served by Twin River Technical Center are those whose future jobs will be most affected by either being “outsourced to the past” -that is digitized or automated or outsourced to India or China where workers are greater in number and arguably more motivated and skilled than those in the United States (Friedman, p. 278).

Data Collection

Formal data collection for this study consisted of interviews with three teachers at three different times of the school year: fall, mid-winter and late spring. Each of these interviewees was engaged in actively changing his or her classroom instructional delivery. One of the teachers has been teaching for over fifteen years, but had employed a teacher centered approach throughout this tenure. Another is a teacher who has been teaching for ten years and was eager to change and confident in her abilities as a student

centered teacher. The third is a teacher who has been teaching for three years and was not confident in her ability to implement the changes specified by the Critical Skills Program. These interviews were taped and transcribed. I also conducted three focus-group sessions with four or more teachers during each in the fall, mid-winter and late spring. The generation of discussion in a fairly informal atmosphere in these focus group sessions provided insight different to that found in the formal one-on-one interviews. The focus groups sessions were also taped and transcribed. To further supplement this data collection, I conducted and took notes on numerous formal and informal field observations over the course of the school year, including 3 faculty meetings (again in the fall, mid-winter and late spring) discussing the teachers' experiences with implementing the Critical Skills Classroom Model into their classrooms. I also conducted both formal and informal observations of classrooms. Finally, I collected documents relating to the implementation of changed practice in the classroom including journal entries of two of the teachers involved in the interviews as they reflected on their work to change their predominant instructional delivery method.

Research Validity

The data collection achieves internal validity in that there is triangulation in the multiple sources from which I acquired the data: interviews, field documents, focus groups, formal and informal observations of classrooms, discussions and interactions, and faculty meeting observations. Also, the experiences and mindset of the interviewees selected provided a diversity lending itself to insight in similarity of teacher experience or lack there-of. Enhancing internal validity is the repetition of each of these modes of data

collection at three evenly spaced intervals within the school calendar year. To further the construct of internal validity, I conducted member checks of the interview transcriptions as well as with my initial data analysis. Also, I employed an informal, though critical, professional study group at different times throughout the research and a single critical friend to sound my ideas and methods.

Data Analysis

During data collection and data analysis, I wrote varied and frequent researcher memos formally and informally working with the ideas that I got from the data. These memos employed different audiences ranging from myself and including my critical friend to my professional study group. Though I had a template from which to work in terms of data I intended to collect at the outset of the research, my data collection was equally driven by simultaneous data analysis. As I learned from analysis of my data collection I continued to sharpen my focus in order to best answer the question that drove the research.

I approached data analysis, especially in analysis of the interviews and focus groups, with the idea that “we are capable of coming to know about events, ourselves and other people in different ways,” and that, “the way in which we know about things guides how we act” (Fisher, 1991, p. 3). This social constructivist approach to data analysis enabled me to embrace the individual perceptions and interactions of my participants with an eye for the meaning which they attributed to events, and the ways in which they responded to these meanings. I looked at individual perceptions and consequential actions in order to derive meaning from these constructed realities of social experience.

With this Social Constructivist framework in mind, I was better able to avoid presupposition of the participants' experiences and perceptions in order to more clearly understand their experiences of their change process in classroom instructional delivery.

With this framework as a guide, I used concrete and diverse tools to analyze the data I collected. Predominantly using Strauss and Corbin's text, *Basics of Qualitative Research*(1998), (though I also heavily borrowed useful information and tools from Coffey and Atkinson's *Making Sense of Qualitative Data* (1996)), I developed categories articulating properties and dimensions through the use of open, axial and microscopic coding. I wrote storylines, scenarios, narratives, researcher memos and descriptive, interpretive and analytical memos using Wolcott's *Transforming Qualitative Data* (1994) as my guide. I also created charts, diagrams, concept maps and illustrations to aid me in establishing connections and in making meaning of the data. This extensive work on what amounts to be a relatively small collection of data, allowed me to come to a full and comprehensive understanding of the relationship the individual educators had with the change process in their classrooms.

Researcher Profile and Bias

Having been a classroom teacher for more than fifteen years, I have personal experience with the responsibilities and difficulties of implementing change in the classroom. Though a change in instructional delivery is contained within a classroom, it is impacted by influences that reach far beyond the classroom doors.

My interest in change in classroom method comes as a result of a varied background in the public education setting. As a public school classroom teacher I acted

as a change agent in several school systems, because it seemed everywhere I looked there was a need for improvement. I also facilitated programs for The Northeast Regional Center for Drug-Free Schools and Communities where I worked with mostly lower income districts and inner city students and their parents who were in desperate need of quality education and programs which they weren't getting. As a current core faculty member of the University of Antioch New England, I work with teachers who hold the responsibility of helping prepare students for successful lives. Equally, in my teaching assistance ship roles at the University of Massachusetts, Amherst over the past five years working as program supervisor for student teachers as well as a seminar instructor for undergraduates in a survey course looking at issues in education and an assistant in a graduate English methods class I have become intimate with the need for change in curriculum delivery. As a school consultant and school coach on educational change, I have a passion to help improve schools and a need to know what impacts teachers as they embrace change in their classrooms. Finally, as a mother of young children, I have a vested interest in helping the world community solve its problems and in my mind, the tool to best do this is public education.

During my tenure, I have also acted in diverse roles of change agent from acting as a leader in incorporating a problem-based classroom to acting as the teacher's union president during my tenure at one of the schools in which I worked. My related experiences, as a consultant for the Northeast Regional Center of Education and as a core faculty member at Antioch University New England help to shape my beliefs of the work of a classroom teacher and the need for change in the classroom.

Most importantly, is that I have been a program coordinator for the Critical Skills Program for over fifteen years and am currently acting as one of three facilitators in teaching the model to the faculty at Twin River Technical Center. In fulfillment of this adjunct faculty role, I taught the Twin River faculty for five full days spread out over the course of seven months and provided three follow-up consulting days working on a one on one basis with individual teachers. While this poses potential bias in my perceptions of the data, it also allows me a deeper relationship with the school, the faculty and the change they are trying to implement.

CHAPTER 4

RESULTS

Results from interviews, focus groups, document analysis, and both formal and informal field notes provide a focused picture of the experiences of twelve classroom teachers as they implemented a problem-based learning approach to their methodology within a faculty community of learners. Four concrete categories resulted from analysis of the data. In this chapter, I will provide an in depth review of each of the categories: a.) the practice of changing classroom methods, b.) the teacher's focus on students within this change, c.) the elements of working within a culture of change, and d.) the personal experience of implementing a methods change in the classroom. I will begin this section providing background information regarding the elements of Problem Based Learning as well as components of The Critical Skills Classroom Model. Next, I will detail each of the four categories using data points and research explanations.

Background

Two and a half years ago, the faculty at TRTC together read the book *The World is Flat*, by Thomas Friedman (2005), the basic premise of which is that as a result of great changes taking place at an unprecedented speed across the globe due to advances in technology and communication, the nation's current and upcoming work force must adapt or face being outsourced. In chapter seven of *The Right Stuff*, Friedman asks, "what is the right kind of education to prepare our young people for those jobs (referencing those that are being outsourced)" (p. 302). His response outlines 4 abilities that he feels are necessary to student success and to maintain this country's competitive

edge. They are: to learn how to learn; to have a sense of passion and curiosity; to be skilled at managing and interacting with other people; and to constantly develop right brain skills such as, “tackling novel challenges... and synthesizing the big picture” (p 307). The TRTC faculty embarked on a journey together the goal of which was to better prepare their students for the world and work of the Twenty-First Century. In doing this they collectively committed to changing the predominant instructional delivery mode of their classroom practice. What teachers didn’t know as they embarked on their journey was what hills and valleys lay ahead of them in their work to provide their students with the abilities that would better enable them to be successful in their futures.

During the 2006-07 school year, the faculty and administration at TRTC decided to adopt and implement The Critical Skills Program, a problem based methodology, as a means of providing their students with a stronger base of “soft skills” -a “sociological term for a person’s ... cluster of personality traits, social graces, communication, language, personal habits, friendliness, and optimism that marks us”- as a part of their education (Wikipedia, 2009). This adoption provided the base of the change in practice that I would observe and study during the 2007-08 school year.

In a focus group interview in August of 2007, I asked how the staff came to embrace the problem based learning model that they were planning to implement in their work in the classroom. Several teachers responded. “I think for a lot of us it came together with the (faculty) discussions that we’ve been having throughout the year.” “We all agreed, or most of us agreed that this was something we want to learn more about.” “It was highly encouraged as well from the administration.” Mary elaborated that Cam, the director, “really enforced it. It was a huge monetary commitment that he was going

to make and he really wanted buy-in if he was going to make that kind of commitment.”

Lisa added that for her, “it started by listening to Ellie talk about it. Just the slant that she had on it (with) approaches in the classroom and, you know, methodology.”

Ellie, the carpentry teacher, had been working on her Master’s Degree for Experienced Educators at a nearby university, Antioch University New England. The focus of her degree was in The Critical Skills Classroom. She was instrumental in introducing the model to the TRTC faculty and its director simply by embracing it in her classroom and achieving nationally recognized success with her work in the classroom. Ellie approached the director of TRTC and the Dean of the Education department at Antioch to negotiate a plan to have what is normally an Antioch 5 day summer course in the Critical Skills Classroom switch to a professional development program for the TRTC faculty which would take place during the 5 professional days through the course of the school year.

Kyle, during an interview in August of 2007, clarified Ellie’s role in its effect on him and others. “Ellie ran a mock lesson in the critical skills model which was really interesting. We (the faculty) were little detectives. Pretty cool! And that got us enthusiastic about the prospects of really doing something for staff development that was valuable to us, individual teachers but also as a faculty. We were going to be a cohort group doing something together.”

The faculty began training in “The Critical Skills Classroom Level I” during two professional days in August of 2007. The third class was in November, the fourth in January and the fifth in February. Simultaneously throughout the year, the faculty

participated in monthly Critical Friends Group meetings as their way of becoming a Professional Learning Community.

The following pages will specify the theoretical constructs and historical development of problem-based learning in the classroom as well as identify and explain the Critical Skills Classroom Model which is a teaching methodology using a problem-based learning approach.

Problem-based Learning in Classrooms and the Critical Skills Classroom Model

John Dewey, initiated the progressive movement in education during the first half of the Twentieth Century. Dewey believed that, “the only true education comes through the stimulation of the child’s powers by the demands of the social situation in which he finds himself” (Dworkin, p. 20). True learning is based on the prior experiences and knowledge of the child and his or her need to know more. The main premise of progressivism is that students are not fully engaged and therefore not working to their potential unless they are actively working with meaningful content which is connected to their prior learning experiences and directly linked to their everyday experiences and norms. A valued progressive approach to teaching is to take curriculum content and turn it into meaningful problems for the students to solve. Though introduced in the early Twentieth Century, progressivism in the schools has been slow to take hold in the classrooms.

Recently, John Dewey’s work has been woven into what is currently known as a problem-based learning approach. It is a “teaching method based on the principle of

using problems as the starting point for the acquisition of new knowledge” (Lambros, 2004 p. 1). Using the problem-based learning approach, the teacher draws from students’ lives, their communities, conflicts, and interests in order to make student learning more meaningful, engaging, and multi-dimensional. In order to effectively do this, however, students must feel safe enough to take risks in their learning and they must be comfortable enough with their peers to collaborate on multi-faceted real life problems.

Thomas Sergiovanni, in *Building Community in Schools*, (1994) argues that a sense of community in the schools is foremost for learners to achieve the goals of the teachers and the school system. He cites “the famous French sociologist, Emile Durkin, (who) proposed that we humans have a basic need to belong, to be connected to each other, and to identify with a set of norms that gives direction and meaning to our lives” (p. 63). Sergiovanni argues that without the fulfillment of this basic need, students cannot learn to their potential. A classroom that has been made safe by having healthy relationships and communication practices for both student to student relationships and teacher to student relationships is one in which the greatest learning will take place. It is also one where a problem-based learning approach can be successfully employed.

If a PBL approach within a safe classroom community will facilitate learning not only in the content areas but also in terms of student skills and dispositions; and if the development of skills and dispositions are the resources our students will likely most need to embrace a world with critical challenges, then there needs to be a change in content-delivery in the individual classrooms across the country.

The Critical Skills Classroom Model embraces a number of aspects inherent in many problem-based learning models. Its foundation is that any Critical Skills

Classroom is one that is an experiential, problem-based, standards or outcomes driven collaborative learning community. A key component, writing challenges, is that of turning the curriculum into problems for the students to solve collaboratively. One of the most imperative aspects of a challenge for students is that embedded within it should always be more than one way to solve the problem. Another “pillar” of the critical skills classroom is that students work collaboratively within a safe learning environment and take time to reflect on their work. These components were the main focus of teachers as they worked to incorporate the Critical Skills Classroom model into their teaching.

Category I: The Practice of Changing Instructional Delivery from Traditional to Problem Based

In this category, I will explain results regarding the experiences teachers had in relation to changing their practice in the classroom. I did not collect data to ascertain an entry point as the teachers in this study self identified in terms of changing the predominant mode of instructional delivery in their classrooms. Results indicated three properties within this category. The first is a range of emotional investment and focus on the experience of changing. The second is the variety of strategies teachers employed in making this change and the third is the array of experiences teachers had in the practice of planning and writing “challenges,” turning their curriculum into problems for students to solve. I will discuss results in all three properties beginning with teacher attitudes and emotional investment, followed by the strategies teachers employed to work within the change and closing with the experiences teachers had when writing challenges.

Teachers demonstrated varying attitudes to changing the predominant methodology of their instructional practice. Their approaches ranged from an unabashed willingness to try –even after “falling flat on my face,” through an inability to “see” how the Critical Skills Classroom Model is different than what they already do, to simply accepting that it is too difficult to go from “an expert to a novice” as a classroom teacher again and thus using tools learned in the course and supporting the faculty in its collective endeavor, but not completely embracing the change for their own classroom methodology. Jason stated,

I think it will be extremely powerful. That’s it. I’m not afraid to take the risk, but I do want to go in with some information. I can just try. Just try. And the most risk is ok that didn’t work. Well you might get embarrassed. There’s no mystery and I’ll be straight with you. I’m committed with two feet. So you only get out of it what you put into it.

Jason was the Horticulture teacher. He was one of two students, not including Ellie who already graduated, who was also enrolled in the Master’s Program at Antioch during the data collection period for this study. His complete surrender to the task of changing his methodology characterized the extreme of approaches I found when looking at teacher attitudes towards this change. While his willingness to try was at one end of a range I found, he certainly was not alone in his outlook. Kyle modeled strength in commitment to students over process with willingness to embrace a new methodology despite the inherent personal challenges. “For me it is not necessarily about getting every student to that 90% competency but taking (each) student from where (he) is and bringing him someplace he hasn’t been. The challenge for me is going to be to keep reminding myself that risk is good. Risk allows growth.” Mary’s approach to change also included

the effect on her students but her consideration of them was on a more personal level.

She stated,

The very first day of class, I was very up front with them (students). I said, ‘we’re going to be doing new things that I haven’t tried in here. I don’t care if you laugh about it but I do care if you laugh at me. Wait until we’re done and we’ll laugh together.’ So I think going in with that attitude expecting to fail and to not be doing 100% on anything –allowing myself right from the beginning of the year that things are not going to go as they normally do. It’s going to be hard. It’s going to be ok.

Lisa demonstrated another aspect within a range of attitudes regarding change with her enthusiasm, commitment and bold embrace. “Giving it half is simple. I want to do it all! And so if I do that, I’ve got this wonderful plan in my head that I’m going to be able to do all of it! And it’s organized and it’s outlined! And the second day I crash and burn and then I don’t know what to do. So that’s where I need a 2 by 4 to the side of the head because I don’t tend to take bite sized pieces.”

The data also showed a common mindset of teachers –even with teachers with high commitment levels to changing their practice, was that of questioning, “how is this different to what I already do?” There were many teachers who denied that they were changing preferring to say that they were “solidifying “or “adding structure” but “definitely not revamping!” Mary said, “I don’t really see Critical Skills as something that’s going to come in and replace the way I’ve been doing things, I think it’s going to enhance. And that’s the way I look at it an enhancement to what I’m already doing.” In response to my question regarding the desire for change in their classroom during a focus group interview, most of the teachers responded by saying that they were not changing. Lisa responded with this, “For me it isn’t change. It is simply having something I can sink my teeth into with support and structure.” Gina responded with,

I'm not looking at it as much as change as an opportunity for continued growth. Because I won't change. It's not going to be a dramatic turn-around. I don't think. I think it will be more tricks in the bag. I mean more strategies that I can implement that will make the classroom a better place. I will still use a lot of the stuff that I've used for years that I think is effective. I think.

I found my discussions with several teachers to be full of explanation for the work they already do with students especially in terms of problem based learning. Robert expressed this during a discussion in February. "I think my old ways tied into challenges and being a coach –maybe more than others maybe not the Critical Skills Model, as such." And Kyle explained "We were doing design challenges 20 years ago. All of our work in tech-ed has always been based on challenges." They used these explanations to indicate that they are already "doing this stuff" but wanted a little bit more. "It's like any other good training that you go to, you know, you pick and choose what pieces of it fit in your repertoire." In this attitude, there was a confidence in existing practice but a desire to improve in specific areas. "I don't think Critical Skills is the end all. I still want to be open minded and I still think it's a blend of what you used to do and what you've had successes at. You make it a blend. What I want to use it for is getting my kids to think." Kyle was confident in his own teaching abilities and was looking for more specific changes as opposed to a sweeping change in the classroom. "I tend to be a very control oriented instructor where what happens in my lab is a direct result of either my planning or my anticipating what the students will do. And I take pride in my ability to do that. But this year, I would like to look back and say that the students had a much larger role in determining the course of events that the class took."

This concept of already employing the philosophy, if not the entirety, of The Critical Skills Classroom, also provided for an attitude of resistance to change. Toward

the end of the year, Kyle, in response to my question “have you changed?” was simply, “no.” When I asked for more in his response he replied, “I saw in the fall where Critical Skills can make that transition (back into the classroom after a 2 year hiatus) easier. What I found was putting what I knew so well into a format that I didn’t know well made it more work and so why bother? All of my teaching for 20 years has been problem learning. Project based. Whatever you want to call it. Project based, critical thinking graded and you know after a certain amount of time you develop a pretty good style that works for you... I was doing it anyway.”

The range of willingness to change was one of several elements that emerged from the data falling within the work of the teacher in her attempt to change her practice. It provided a base for the actual practice of changing, but the practice itself came with strategies that translated into teacher behaviors. Data revealed that teachers employed a range of strategies to help them integrate a new practice. Teachers employed the use of journal writing as reflection, talking with other teachers, observing other teachers, focusing on single tools and strategies at a time and connecting new knowledge with past practice and past learning to aid them in their task.

One of the strategies used by teachers, journal writing, was practiced by both Mary and Jason as part of their Masters program requirements at Antioch. Both Mary and Jason reflected consistently in journal entries. About that Jason said, “it helps. I can work things out with it.” And Mary counted her journals as one of the main things that helped her stay on track. “I put frustration into that and Paul [her advisor] would just kind of write back –you know he didn’t direct me he would just write a non-chalant comment and I’d be like ‘daaa! That’s so obvious!’... it’s right there.” Another form of

communication and reflection that the teachers found helpful was talking both informally and formally with each other and sharing stories and ideas. Jason articulated the benefits of talking with colleagues in a most straightforward way. “For me it definitely is people. I use other people to figure things out. So the more people I can talk with specifically about ‘what did you do? What worked?’ and about what I’ve done, the better.” Robert echoed the value of giving and getting ideas through conversation. “I like those ideas coming from everybody else too. I may not like three quarters of it but one quarter of it sparks something else and so it sparks new ideas.”

A component of the year-long professional development program at TRTC was the incorporation of professional learning communities called Critical Friends Groups or CFGs. The formal integration of sharing work and conducting professional dialogue was also a welcomed strategy that helped teachers implement new methodologies in their practice. In a focus group interview, the following dialogue was full of laughter and positive energy.

Jason: “I liked it when you (Lisa) brought in work and said here’s what I did.”

Robert: “So did I!”

Jason: “That shed light.”

Robert: “you brought in the first one and (pause) it was a mess!”

Laughter and everyone talking at the same time and laughing

Lisa: Oh wasn’t it?!

Robert: “you were going to do like 6…”

Lisa: “Yeah I was going to do it all right in one challenge!”

More laughter

Robert: “And then to see it come back though revised! Oh my gosh, it was like... actually we all made the same mistake and we could learn by your mistake. You showed it.”

Another strategy along similar lines of communication and reflection was observing other teachers informally and formally. These observations were both spontaneous, as teachers stopped by, and planned as a component of their Critical Friends Group process. Mary articulated the benefits of these observations when she said, “I can see it working in a totally different context in (Jason’s) room and it gives me ideas –you know gets me thinking out of the accounting box.” Robert echoed this enthusiasm with, “it was really something to see it in action in Ellie’s room. It made it concrete for me.”

Also within the strategies and behaviors of the teachers who were changing their predominant classroom method, was the use of a few tools at a time. Mary talked about this in an interview with me in February. “I’m working on pieces of the community building versus writing challenges. “We’re doing a lot with the carousels, with the sweeps and... daily reflections.” And Jason talked of using brainstorm charts to help students identify quality work. “The negotiated sort of assessment is one tool or tangible thing. Here it is. That’s worked well.”

A concluding finding within the strategies teachers employed in the context of changing their methodology was that of incorporating previous training, knowledge and practices with new ideas. Kyle was especially enthused by this. “It’s kind of come full circle now for me when I see opportunity right now is to take some of the knowledge that I gained ten years ago and kind of reinvigorate what I do in the classroom.” In a focus group discussion, Kathy talked of using her expertise of “build(ing) these little stories to make the kids want to do the work and make (the curriculum) a little more exciting. So

it's just interesting now that I've found out that there's a more organized way to do it and then the whole debriefing part helps to follow through." And Jason explained that though he was doing project oriented work prior to taking the Critical Skills course, the structure of writing challenges helped him better work with this aspect of his method. "And I clearly see it –in terms of the challenges- what that helped was much of the problem based learning and project oriented instruction that I use is I really like the time frame to it and that interdependence is built in."

A common focus in teacher discussions regarding their work to change their method was within the area of challenge writing and planning. Robert was one of the teachers who struggled with the idea of completely embracing the Critical Skills Classroom Model feeling that he already employed the general characteristics of a problem-based learning classroom. Perhaps it was because of this confidence that Robert found he was successfully using "challenges" without taking the time to carefully plan and write them. He stated,

Just to take even verbal challenges. I haven't taken the time to write it all out. I'll just wing it off the top of my head but I'll put it in challenge form. 'I want you to split into two groups however you want. I want you to make a presentation on the answer. I don't care whether you develop power points, notes, whatever you want. Go ahead and do it. When I reviewed their work, they hit it! As a matter of fact I took their work and put it into the unit review!'"

Mary, in contrast, struggled with challenge writing she felt largely due to the context of her subject area. She stated,

I am attempting to work on challenge writing for my accounting class but I am struggling horribly! ... The logistics of trying to orchestrate a group challenge for students at the same place in the curriculum is a nightmare. In addition, I am beginning to question whether or not challenges are appropriate for accounting. In accounting there is not a lot of room for open-ended ideas.

Many teachers expressed difficulty in the planning aspects of implementing problem based learning in their classrooms, expressing a sense of being unsure of timing as well as difficulty in knowing how much to do at a time. Kathy brought this up in a focus group conversation saying, “Well, yeah, I’m never positive of how long it is going to take before they (students) actually do it!” and Jason explained that it “always takes longer than I intend.” Robert laughed at himself when he expressed that “the first one (referencing challenges) I bit off way too much.”

Teacher experiences of changing classroom method ranged in a variety of ways beginning with the attitude each brought to their work. They applied a variety of strategies in implementation and they found varying degrees of difficulty within the actual planning and writing of challenges. What was striking within all of their approaches and experiences however was the emotional context of their work. I will close this discussion of the practice of changing methodology with a list of emotions teachers expressed and the descriptors they used in their discussions about it. “Difficult,” “confident,” “shaky,” “insecure,” “a nightmare,” “surprised,” “thrilled,” “insecure,” “off my balance,” “tired,” “excited,” “ready to roll.” The array of emotions teachers expressed indicate that the teacher experience of changing classroom methodology reflects that it is as much a personal journey as it is professional work.

Category II: Teacher Focus on Students

Overall, teachers' work is predominantly focused on students. Not surprisingly then, a lot of the teacher conversation within the data I collected is about students. Data showed three primary areas of focus on the student. Teachers reflected on their relationship with students, the skills they felt students were lacking, and the potential payback of incorporating problem-based learning in their methodology, as well as the student achievement and engagement teachers witnessed when they used problem-based learning. In the following section I will use the data I collected to discuss these aspects of the teacher focus on students.

The methodology a teacher chooses to use in his classroom can affect the student-teacher relationship in both positive and (usually unintended) negative ways. The relationships teachers had with their students fell on a spectrum ranging from positive to negative. In interviews and focus groups, teachers reflected on the aspect of the student teacher relationship as it related to changing their instructional delivery. Dan illustrated this concept when he said, "at the end of lab, I will debrief individually with students and with the whole class. Many times I walk out to the bus with students to finish up the conversation." Much of Dan, the culinary arts teacher's, focus was on student ability to work together –this is part of his curriculum. But he was aware that before he could ask them to work together, he had to take time to develop individual relationships with them. He referenced the importance of approach as a way of nurturing their self esteem. "Students need to be approached in a fashion that makes them feel good about themselves."

Mary also illustrated this level of commitment to fostering a relationship with her students. As part of her Master's degree program, Mary was required to focus on one

student per semester and take time in her journal entries to reflect on the chosen student. During the second half of the school year, Mary chose to focus on “Heather” because Heather’s behavior had begun to significantly change after she turned 18 and this concerned Mary. Mary wrote, “I could go on and on about her –she is a great young lady. I think it will be very rewarding to focus my attention on Heather this semester because I think she needs someone focusing just on her.” Like Dan, Mary values fostering a positive relationship with her students as a way of nurturing student self esteem as part of her teaching practice.

This aspect of nurturing student self-esteem had its rewards for the teacher as well. Kyle, in response to my question regarding a primary purpose for making a change in his methodology, referenced a sense of reciprocity. “For me it’s the unsolicited gratitude that I have received from (graduates). That they’ve participated in whatever journey I’ve chosen to take and there’s a look and a sense of gratitude.” Several other teachers also recognized the value for *them* of nurturing a relationship with students. Mary reflected on a student of hers with whom she had her share difficulties though she did not give up and employed a variety of approaches to helping him. She was both surprised, then and en-heartened by his extension of an invitation to her to his birthday party. “On a more positive note, “Kevin” came to class and announced it was his birthday. He asked if I wanted to come to the party... I apologized and told him I was unable to attend... and he said that he would bring me some cake tomorrow. This is something I never expected from him but it was sweet!”

At the other end of the spectrum with regard to the teachers’ sense of relationship with students and the effects that the choice of instructional delivery can have on this

relationship, is that of *not* feeling a connection to the students. Kyle was looking to change his method in the classroom because he found he had begun to merely “tolerate” his students. “What I see myself needing now, and I thought it was patience, but it’s not really patience. It’s a tolerance for where they’re at and a willingness that they are not where I want them to be. And they may not get there. My tolerance for students not willing to take risks really, really dropped.” It seems Kyle’s desire to change instructional method comes from a need to improve his relationship with students. He will have more “tolerance” for where they are if he can get them a little further than he sees they are now. Jason also seems to be approaching a new methodology for similar reasons. “I get so frustrated with students these days because they are just looking for the answer. And I cannot respect that.”

This element of the struggle with students because of a lack of student skills also emerged as a separate aspect of the teacher focus on students. Virtually all the teachers referenced students’ shortcomings especially in the area of “soft” skills [referencing business speak referring to qualitative skills such as decision making, communication, leadership, etc.] as a primary purpose for wanting to embed problem-based learning into their curriculum. Jason talked about a general student lack of being able to think for themselves. “Am I 100% invested in Critical Skills? I see some advantages to it. Just getting my kids to think. Getting students to go two steps ahead and then three and then four. You don’t get techniques like that in regular education (courses).” Jason also talked about students lacking an internal sense of quality. “When I ask them what they think would make that product quality, they can’t come up with anything or they say, ‘I don’t know. What do you want?’” Dan referenced a lack of skills in relation to students’

unwillingness to take a risk. “Traditionally students have shown a tendency to become static, striking close to what meets their comfort levels.” Kyle put blame for the lack of student skills into the larger arena of the institution. He stated,

I’m really afraid that what we’re sending out of our high schools is not prepared. And it’s not that they’re not smart. It’s that we in the last 20 years have changed our educational structure to a point where we want to make sure we look good so that we do rote skills and they (students) can re-gurgitate the information so that they look good on a standardized test. (Students) don’t think for themselves. They don’t want to problem solve. They don’t. It’s too much work.

Mary elaborated on this idea when she said, “(students) don’t have the confidence. When I ask them what they could do next (when problem solving), it’s as if they just crumple. We (referencing schools in general) must be doing something wrong. They don’t know how to answer those questions. Is it a lack of initiative? I don’t know, but it’s a lack of something, or a lot of things!”

A lack of student skills provided a common teacher motivation for changing methodology. It is because of a primary focus on students –specifically, teachers wanted to help students develop stronger skills- which motivated teachers to change their practice. Teachers saw students before (in terms of hopes) and during (in terms of success or achievement) their methodology change, as responding to problem based learning positively.

Mary provided a caption in a journal entry about a student she hopes to help through the incorporation of problem based methodology in her curriculum. She wrote,

A goal I would like to continue is developing strategies for students to take more ownership for their learning... One young lady in her senior year does not care about quality at all; she just wants to hurry to get the job done. With every assignment she comes up to me, shows me her work and asks, ‘is this what you wanted?’ I have started responding by asking her if it’s what she wants. And she

replies, “I don’t know. I’m not the one grading it.’ I would really like to help this young lady develop confidence in her work.

Wyatt, a first year teacher, looked toward implementing the Critical Skills Classroom Model with the hopes of increasing student emotional learning safety and community in order to develop more meaningful work. “I’m very curious to watch how trying to implement more of a community in the beginning so that when the end comes around, those relationships are a lot stronger and it’s a lot easier for [students] to take the risk of that [making student work more interdependent] with their project.” And Deirdre, in a focus group interview at the beginning of the school year, expressed hopes for getting a group of students with diverse needs to learn to work well together and learn from each other. “We get such a mixed bag of students –from the very high end of classes- to the student that can’t remember two simple tasks (long enough)to do them. I’d like to get a mixed bag to work together. It [will be] nice to see those kids that usually take the back burner included and make sure everyone has a task and they’re self-directed. You know it’s self-directed learning. I want to guide them down the stream and know they’re going to learn.”

In subsequent interviews, focus groups and other document data, once teachers had some experience working with the Critical Skills Classroom model, the focus on students moved from hoped-for outcomes because of the implementation of problem-based learning in their classrooms to recognizing student successes and achievements because of the implementation of problem-based learning in their classrooms.

Ellie, provided a somewhat removed (by the experience of having had two years of implementation of problem-based learning under her belt) observation of teacher

reactions to student success when asked about her experiences with the faculty as they find success. She stated,

It's the seeing, like giving a challenge and seeing the difference between the way they (students) used to do things and I love the surprise at their students. They're surprised at the quality; they're surprised at the level of conversation. And they realize, 'maybe I didn't believe in my students as much as I thought because they just shocked the pants off of me!'

Mary gauged her level of success with problem-based learning in her classroom through the attitudes of her students. She stated,

And now when I give them a task, they're (students) like, 'can't we do a challenge?' The kids really, the love it and they get a lot out of it. I mean I can see the difference even in our conversations that they really got (the concept) of the work... They were more engaged. They just came in and were like 'oh we've got this project and let's figure out how to do it! And so the engagement. And that was something I really wanted. The kids get excited about their learning and it's not a chore for them. It's something they really want to do.

Deirdre expressed excitement at a similar student success in her classroom. She stated,

I did this neat thing on Monday... So I just broke them into groups where they each had to research a particular item and I had directed questions and they just came up with stuff! And they were like, 'can we use a computer?' and 'can we make a power point?' And 'can we do this?' and 'can we do that?' And I'm like, 'Oh yeah! Send me a copy 'cause I can use it for something down the road!' You know they just get right into it and for what (I) see and the value of it? It sure beats teaching to the test!

Ellie, the carpentry teacher who was in her third year using problem-based learning through the Critical Skills Classroom model at the time of data collection, got satisfaction out of the "Ah-ha's" she watched her students experience toward the end of the school year. She stated,

everything gets re-connected back... It really is the culmination of everything. It links together for them (students) and they are like 'Oh! Oh! Now I see where this fits!' For me that is satisfying." Similarly Mary watched her students "put it all

together” during Winter Carnival when her “level twos” who at the beginning of the year had extreme difficulty coming together as a learning community, (“Oh my gosh, I just didn’t think it was ever going to happen!”) “did it! I mean, we didn’t win anything, but they had an awesome time! They were laughing and were all so engaged. And I stood there watching something simple like that where everything we’d been doing in the classroom all year was up to that point where they (students) were able to do that.

I will conclude with an anonymous comment written on a survey given at the end

of the year which provided a straightforward snapshot of teachers being motivated to continue with the implementation of problem-based learning in their classrooms. “The students’ response and involvement convinced me that this method is relevant and *very* necessary!”

The theme of teachers focusing on students within their experience of changing methodology was strong. While much of the work of the change was within their curriculum -writing challenges and planning lessons in a way that was different to their norm- teachers focus and purpose for this change was students. The student-teacher relationship underlined the work of the teacher as she made changes to her curriculum delivery and her motivation was student insufficiency especially in terms of workplace skills or “soft skills.” Once teachers began using the problem-based learning model in their classrooms, they gauged their accomplishment through the successes and achievements of their students.

Category III: Working Within a Culture of Change

One of the primary purposes for this research was the unique situation posed by the Twin River Technical Center. The entire faculty (but for one person) and administration decided together to adopt this problem-based learning approach through their professional development program. It is rare to have virtually an entire school embrace a classroom methodology change at one time and together. Because of this situation, much of the reflection and focus of interviews, focus groups and reflective journals and essays was on the experience of working within a culture of change. Teachers shared common experiences, motivations and goals. They also enjoyed the support of each other, outside experts, and the administration. The combination of many of these supports resulted in an infrastructure of support for the implementation of problem-based learning classrooms. In the following section, I will use the data to discuss these aspects of the experiences of teachers working within a culture of change.

Teachers shared a common experience within the very adoption of the professional development program to learn about and implement problem-based learning classrooms. Gina articulated this when she said, “this was something we wanted to learn more about.” “We started talking about the goals we wanted to reach when we were reading *The World is Flat*. [We were] talking about how you reach the work ethic and things like that. And then the methodology of the Critical Skills Classroom was brought up during a staff meeting and, well, we all knew we wanted to get someplace.”

The decision to adopt the program arose from a shared need: that of helping students learn and master the necessary skills to be successful in the Twenty-First century. And this shared goal came about because of a common experience reading the text, *The World is Flat* by Thomas Friedman. Ellie explains it this way, “there’s a reason

behind why we're doing this beyond, 'hey it's a cool model and I think it'll be great for our students.' No. As Career Tech Ed, we all agreed that one of the most parts of what we have to offer students is... the overall skills and dispositions that as the world flattens, people need."

As the faculty anticipated embarking on a "journey together" during a focus group session at the start of the school year, even knowing that they would share common experiences provided some measure of comfort. Mary stated,

I think going through it all together. I mean, we're all going to have to try something that works so smoothly here (referencing the second day of training they did together) and we're going to bomb in our classroom. And we're going to have other people that are having the same (experience) so it's not like you're doing it all by yourself. You can commiserate with your comrades, like 'Oh my god' that totally blew up in my face!' You know, we'll be able to sympathize with each other because we all know what we're trying to do.

The faculty also had the benefit of taking a course together, The Critical Skills Classroom Model. The course modeled the techniques it taught and in doing so developed within the faculty a collaborative learning community within a safe learning environment and this common experience provided a foundation for the faculty as they all began to implement problem-based learning in their own classrooms. The development of a safe learning environment made it easier for teachers to share their work as they began their school year. It broke down some of the barriers of teacher isolation thus allowing for more discussion of common experiences. Wyatt articulated the effects of this safety net. He stated,

I think one of the obstacles I've overcome already on this program is that... well being hired a week ago. I know a lot of you face value because I've been through this school and I've volunteered here a lot. But you know, I held up a one yesterday (referencing when they were asked to indicate their comfort level with the other members of the faculty at the beginning of the first day of a two day

long session, by one of their Critical Skills Classroom instructors) on how well I knew all of you. And through this model, creating our own community of staff, today I held up a four and based on my comparison of what I had to look at yesterday I was just very excited that that obstacle of knowing who (I) can turn to for what type of thing, well, I just felt very comfortable. So I feel very excited that obstacle is out of the way before the kids come into the classroom. I'm very excited about that!

During the first half of the school year, the teachers also worked together in Professional Learning Communities and this time spent together supplemented the common experiences they were having in their own classrooms. Robert, "liked learning that everybody else was making mistakes too! I was pretty sure it wasn't just me but (I) was just as glad to find out for sure!"

A result of these common experiences the faculty had was that of a shared language. Ellie cited having a shared language as one of the most critical outcomes of the change process. She stated,

I would say that one of the immediate influences that this has had on us as a building and staff is it's given us a common language. We are able to talk to each other about what's going on in our classrooms, and have a common platform to do that. Where we know what everybody is saying when we talk about a challenge. Or we talk about community building or we talk about targeting specific skills. Even that terminology –having that in common- has enabled us to have more open conversations with each other across programs.

A light hearted example of this occurred during one of the focus group interviews, Deirdre elicited a good deal of laughter and banter when she referenced a "Critical Skills Moment." Her colleagues responded with absolute glee and delight. "Oh yeah! We've all had those!" "Yeah! both good and bad!" "Let me tell you about one of my Critical Skills Moments..." Mary moved forward with the conversation by discussing the value of working with other teachers who truly understand what she is talking about when she

discusses methodology by expressing her frustration at trying to explain to “other” teachers what it is that she is doing. She stated,

I think it would be so scary (if the rest of the staff didn't know what I was talking about.) It is really hard to sum up for any person what the Critical Skills model is all about. I know just like my sister's a teacher and I have friends outside the district who are teachers and when I tell them about challenges they're just like, 'oh yeah that's like one of those Friday afternoon projects.' And I'm like, 'No!' And they are, 'Oh, it's one of those fun projects at the end of a unit.' And I'm like, 'No!' So I think that if I had a building full of hearing that, I'd be like especially where I've been really frustrated trying to figure out challenges for accounting, I probably would have given up I think. I think having it become part of our culture has helped.

Ellie also referenced the “Critical Skills Moment” when she was reflecting on the culture of change within the school. She stated,

I've just seen wonderful little snippets of conversations happen around the building about, 'oh you wouldn't believe what happened in my classroom! It was such a Critical Skills Moment!' Little things like that about you know, 'I gave a challenge and...' or 'Wow! I think I finally get it!'

As well as having common experiences and shared language with implementing change, another aspect of working within a culture of change for teachers was that of sharing goals and motivations for the change as was discussed in the previous section regarding the teachers' focus on students. Not only did teachers share a common focus at the inception of this change process, but even as they went through it, they shared the common goal of helping students to develop “soft skills.” And they shared a mutual desire to help students achieve success with this.

A final characteristic of working within a culture of change is that of experiencing support from a number of sources. Teachers referenced this sense of support within every conversation I had with them both formal and informal. They experienced it within

the infrastructure of their school; in terms of receiving expert advice, from both inside and outside their school; from their administration; their colleagues; and even their spouses, families and students.

Because the faculty and administration worked together on the decision to embrace this methodology change collectively, they inadvertently established an infrastructure of support within their culture of change. First, everyone was doing the same professional development, the support staff and administrative team along with the teachers all shared common understandings of paperwork, credits and other detailed minutia. During an informal visit to the school, I was privy to an exchange between teachers regarding paperwork for the course. In reference to taking the Critical Skills course for credit and a query regarding necessary paperwork one teacher said to another, “Don’t worry, Mary will be able to set you straight on that and if she can’t then I would try Ellie.”

Second, because virtually all faculty were using some aspects of the problem-based learning model, and because the administration and guidance department was also trained in the Critical Skills Classroom model at the same time, when it came to clarifying concepts with parents and dealing with discipline issues, everyone was using the same language and had shared understandings of what the outcomes of a problem-based learning classroom should be. Mary attended a meeting with one of her students, his mother, and the administration to discuss the student’s deteriorating behavior in a different class. In this meeting the student’s lack of initiative was one of the issues. “His culinary instructor voiced concern that he (the student) did not seem to be serious about his education this year and that he was not showing any initiative.” Greater student

initiative is one of the identified “soft skills” that the faculty is targeting together in their implementation of problem-based classrooms.

Also within this infrastructure of support fell the use of the Critical Friends Groups or professional learning communities as discussed in the previous section on common teacher experiences. Because of the time demand of an effective professional learning community, it was necessary that the administration, guidance department and faculty members work together to carve consistent monthly segments of uninterrupted time for the professional learning community to meet. The administration and faculty came together to make this support a part of the existing infrastructure.

A third feature of the supporting infrastructure was the set-up and use of a faculty folder on the Tech Center’s computer network. Teachers were able to use this folder to share work, and discuss issues as they came up in their planning and challenge writing. Mary referenced this in response to my question regarding support during a focus group session. “I think having that folder on First Class as a place to get ideas and give ideas. When it (is) active it is good.”

Fourth, in relation to the infrastructure that provided support, was the availability of experts from both within the building and outside of the building. Many teachers referenced Ellie’s (the teacher with three years’ experience and a Master’s Degree in The Critical Skills Classroom Methodology) advice and help when asked about supports. In addition, Antioch University had four professors working with the school throughout the year and this was welcome to the faculty. Also the two teachers who were enrolled in the Experienced Educator’s Master’s Degree Program through the university felt supported

by that experience and structure. Finally, the faculty felt the presence of administrative support as they embraced this methodology throughout the course of the school year.

Ellie's presence in the school as a respected expert came up several times in reference to available supports. She was a critical aspect of the infrastructure of support. Mary identified Ellie as a predominant force in terms of helping her to stay on track when she was having difficulty with any of the aspects of implementing changes in her classroom. "And Ellie has been a huge resource. You know to go to her and just kind of run challenges by her and she actually came into my classroom, because I (was) like, 'I don't know what I'm doing that's Critical Skills! Just come in and observe and tell me.' She came in and gave me a beginning assessment so I kind of knew where I was starting." Jason, also, cited Ellie as one of his primary support systems. "Well, I know that she can tell me how to get there. And she's a great help when I just need to talk things out."

When Ellie talked of her ability to support teachers in their process of change, she cited her own experiences in terms of her struggles as helpful background to know how to guide them. "I understand that it's hard (referencing teachers who are implementing problem-based learning). I (try) to keep in mind that this is their first year of exposure. And remember my first year of exposure." Because of her own experience implementing the model *without* outside support of any kind and working essentially in isolation because of a lack of a supportive infrastructure, Ellie had a clear understanding of her role within a culture of change. She stated, "In terms of support, another piece is having access to someone (in the building) who can validate 'yeah, you're on the right track. You might want to try this, you might want try that.'"

Though Ellie was experienced in problem-based learning and a graduate of Antioch University, her support role was as resident expert. She deferred to faculty from Antioch as the most knowledgeable and expressed an understanding of the need for that outside expert role. She stated,

One aspect (in terms of support) is obviously having the support of people at Antioch –people who know the model better than anybody else- is crucial. Because when people are in a risky situation and new situations, it's natural to want to cling to something safe. And a lot of times that something safe is somebody that knows more than you. 'Don't let me fall. Give me some more information because I don't want to fail.' The other piece is having somebody who doesn't belong to your staff and being that support is critical because there's not judgment. They walk away at the end of the day. You can say things that you might not be able to say to a peer or to someone who you've got to live with for the next whatever.

Jason found the Antioch personnel helpful because of the advice he received. "Paul happened to be coming in to observe me and I thought the overall flow of it (a challenge the students were working on) went terrible. After, Paul stated, 'you maybe tried to put in a little too much on the product.' Simple things like that." Dan, the culinary arts teacher expressed that value of having a valued outside expert else "see" what he is unable to. "I am able to see my work through your eyes (speaking to an Antioch faculty member) in the classroom when you're here and I see things that are as plain as day but that I didn't see before!" Antioch personnel were available and present and active in providing continuous support, an added beam supplied the infrastructure.

Mary and Jason also had the benefit of experiencing a greater sense of an infrastructure of outside support as they were both members of a Master's Degree program within Antioch University. They took monthly weekend classes with a "cluster"

of other teachers. Because of her position in the Master's program, Mary was able to place her work within a bigger picture. She stated,

Having the regular monthly classes kept me focused and I really tried to focus the assignments that I had and integrate them in with my classroom so that it wasn't something that was just 'ok, yeah it would be nice if someday I was using that.' Every assignment that I did I tried to at least pull something from the classroom that a class was working with so I constantly was touching and re-connecting with the Critical Skills and whatever class that I was taking –whether it was Learning Theory or whatever. I just constantly tried to pull things together as much as I could. So it was a constant monthly re-check of what I was doing.

Jason spoke of the continuity and the “constant press to stay focused and work through the ideas in (his) head” because of working in the Master's Program. “It does help being in the program with Melissa.”

A final element of support, within the infrastructure of the school was the administration. It is important to know that the director of the school, Cam, as well as the assistant director of the school and the entire guidance department participated in all 5 days of the Critical Skills classes over the course of the year. They were present during the beginning decision making process -indeed Cam is considered the generator of initial ideas by some. “Well, Cam asked the question, ‘what can we do better?’ I think that's how it started.” Ellie also talked about the value of having the director fully on board in terms of its effect on teachers' willingness to take risks. “I think all along probably one of the most poignant support systems we have is our director. Knowing that we (teachers) will not get resistance from our administrator because we are trying something new is pretty critical.”

Kathy talked of administrative support in a different light -its ability to provide continuity. She stated,

I think having administration on board is kind of nice because we won't start a new directive next year. Maybe we can keep working on the same ones because I know we've travelled down so many dead ends. I think of my Critical School Teacher book just sitting up there on my shelf. All these different things that we start and it's always, 'oh maybe we'll start something new next year.' So I'm looking forward to sticking with this and learning it in depth.

Wyett, the new teacher experienced administrative support by being introduced to the idea of problem based learning through Cam. "I didn't find out about it until I was going through my professional development plan with Cam... He introduced me to it (the idea of taking the Critical Skills Classroom course as professional development) and told me that it would be a great opportunity to work on some of the credits towards my licensing and also get integrated into teaching." He went on to say,

I think, you know about the system part, I'm very excited working with Cam and knowing ... that we're all in the same boat and there's not going to be this administration like, 'well we don't want you to change.' He's (Cam) encouraging us to be here and so I'm excited that we're having the opportunity to try this stuff without the barriers of the political side.

An interesting finding with regard to the aspect of administrative support within a change infrastructure came about through the results of a brief survey some of the TRTC teachers completed at the end of the school year. Five of the six surveys that were returned attributed "administrative support" as the greatest "feature that teachers found helpful in effecting change in their classroom this year."

Moving away from looking at the characteristics within the infrastructure of support but remaining with the theme of working within a culture of change is a final component I'd like to discuss: that of the support of colleagues and spouses as a measure of support for teachers as they worked to create a changed methodology in their classrooms.

When asked for any final thoughts in an interview towards the end of the year, Mary identified specific facets of the support she had in sharing the experience with her colleague, Jason.

I couldn't have done it without Jason. It's great that we're in the same building. When I hit a wall I know I can just head upstairs to his room for ideas. And our programs are so different. He's so much more hands on with what he does. So when he's trying to do something more academically based he comes to me for ideas and when I'm trying to do something more hands on, I go to him, It's been a good balance. We're each other's cheerleader when we're like 'ugh! I can't do this.' The other is, 'come on how many hours out of your life? This is no big deal!' First semester he was dragging his feet. This semester I was dragging my feet. We've kept each other on target.

Other teachers targeted proximity and the generation of ideas as well as needing to cheer or be cheered on in their discussions of collegial support. Ellie, when describing a difference she felt and saw within the building culture, painted a vivid picture of the benefits of proximity, idea generation and encouragement. "People are stopping into each other's rooms and saying, 'check out this challenge,' 'read this,' or 'hey I was doing a challenge today and you know I'm not real happy with the way I reacted. I don't like the way I reacted. What do you think?'" There's a good degree of that going on in the building." Mary, Karen and Jason agreed with each other when it came to the necessity of collegial support. "The fact that we're all in it together and surrounded. (We're) banging our heads together." "Yeah, I just need to bounce my ideas off of someone and then I can keep going." "Oh, yeah. For me it definitely is people. I use other people to figure things out." Also of note, with regard to the support of colleagues when working within a culture of change is the fact that the second most cited support on the survey given to the teachers at the end of the year was "collegial support." "I can't imagine

doing it alone. I really can't. I think it probably would be possible, but, I think it would be hard. Really hard.”

Mary was the only teacher who talked about the support of her spouse but what she had to say was of interest. She was talking about missing some of her son's baseball games and “things like that” as a result of her work to implement problem-based learning in her classroom. “It's been hard. But my husband has been as supportive as ever. He's been picking up the slack. I'm lucky. I am.” She went on to talk about valuable advice her husband gave her one afternoon when she was feeling particularly frustrated and “like giving up” because her students told her they “were sick of being (her) guinea pigs.” “I actually talked it over with my husband and he said, ‘you know Fred (their 7 year old son) complains every time that you want him to eat vegetables. Does that make you stop?’ And I said ‘no.’ And he said, ‘well this is the same thing. You know it's good for them. You've got to keep force feeding them. You can't let them stop. You have to at least try. And I'm like, ‘yeah you're right!’ And so it really was him that made it so black and white for me. That I'm doing it whether they resist or not.”

Because the entire school faculty and administration embarked on this plan to target specific “soft” skills through the use of problem-based learning, the faculty and administration shared common experiences which continued to build and develop. Out of this arose a common language and an infrastructure of support. That, combined with the support of colleagues, administration and some spouses summoned a school with a culture of change within which teachers worked.

Category IV: The Personal Experience of Implementing Change

With this final category exploring the change experience of teachers implementing problem-based learning in their classrooms, using results from analyzed data, I will qualify the experience of being a teacher who is working to implement change in her classroom. To do this, I will first discuss results regarding teachers' perceptions of themselves including the range of ways that this self perception influences their beliefs and behaviors. Then I will situate teachers in the context of their "journeys" as a way of outlining the results of the personal experience of teachers implementing change in their classrooms.

Kyle articulated the sense of self that adheres to being a teacher when he said, "my first passion has always been teaching. My parents are teachers. It's always been a part of who I am." A necessary task of teaching is to give of oneself. Kyle talked of himself as a teacher in relation to his perceived ability to change –to do what his students are requiring of him in order "to help them gain the skills they will need to be competitive in a global market." And though he left the classroom for a period of two years he came back to it because, "it (administration) didn't work for me. I need to be in the classroom." The mindset of being a teacher is a self concept that comes with its own qualifiers and conceptions that define it and provide both guidance as to how to be a teacher, as well as notions of what one ought to do to be a teacher (Rosenholtz 1991, Evans 1996, Little, 1990). I found this concept played an important role in the notion of changing practice.

Mary was a conscientious teacher. She taught accounting full time, supervised the management of the school store, advised a local young business person's chapter, volunteered with her students in projects in the town, and was earning her Master's

degree in education at the time of this study. Couple this with having an extended family and being a mother and a natural conflict arose. “It’s a constant struggle. But when I set out to do this (earn her Master’s degree while implementing problem-based learning in her classroom), I said I’m going to be selfish for the next two years. And that’s a hard decision but I’ve got to do it. I feel bad. You know as a mom, you’re doing everything and now I feel like, ‘no I can’t do that.’ So that’s been hard.”

A teacher’s self concept plays an important role in implementing change in the classroom. Wyatt, the first year teacher made an interesting comparison on the subject of his sense of self to illustrate his attitude toward learning about and implementing problem-based learning in his classroom. He stated,

A way to compare it, I guess, (would be) if I were a piece of clay going in to be made by an artist into something. I’d start cutting the clay right now or something. You know it’s my first year of teaching, everything that I’ve been taking in from “Methods” and from this program is what I know about teaching – it’s who I am currently as a teacher. I’ll take any information at this point and I’m glad it’s good information. Right now I’m very pliable and I’m looking forward to being a good teacher.

Similarly, Mary’s sense of self affected her approach to change in the classroom when she made the decision to get her Master’s degree and work to change her practice in the classroom. No doubt she knew she could do it because of her prior experiences and related skills in her field. Later in the same interview she talked about meeting student resistance to her methods and her reaction to this resistance. “We had some tension – weeks where it was just living hell for me. They hated me. So there have definitely been some ups and downs; and of course you take it personally and you beat yourself up for that.” These ideas of being a “passionate” teacher as Kyle put it, or “being in with “both feet” as Jason stated or simply deciding that you are going to be “selfish for the next two

years” indicated a sense of commitment to the profession as an extension of self. This sense of commitment and knowledge of self as a teacher provided the launching point for successful or not successful as the case may be, change in the classroom.

Once in the process of changing methodology in the classroom, teachers found that their teacher identities could be both helpful and a hindrance. Kyle referred to himself as a “workaholic” with regard to not giving up when it gets difficult and Mary struggled with one component of implementation when she realized that she has a “helping personality” which made it difficult for her to help students develop “self reliance.” “So that’s challenging for me to just sit back and not answer the question and let them figure it out.”

Two predominant facets that comprise self identity are a set of values and a guiding philosophy. Discussions around values and philosophies within the field of teaching in the interviews and focus groups throughout the year were prevalent. Kyle indicated a strong value for knowledge. He wanted to help his students who truly want to gain knowledge. “You know, Mr. Black, what can you offer me today because I’m thirsty for knowledge?” Likely this value of wanting to instill knowledge in his students came from his confidence in his own knowledge. “[I have] the comfort of knowing after 20 years experience I’ve got the technical expertise –that’s the easy part.” Jason valued an internal sense of quality and initiative. “I’m just working to help them come to their own sense of what is quality –you know without asking me!” Also, within the theme discussed earlier, the student focus of teachers as they first identified a need for and then implemented problem-based learning in their classrooms, teachers illustrated that they value student growth, their development of skills and their success. Mary, again

reflecting on her difficulty with allowing students to find their own answers instead of “doing it all for them,” recognized some conflicting values with regard to student success and development of skills in her work. She stated,

Because I want them (students) to succeed and I want them to move forward and I don't want them to struggle. I mean, you want to make it as easy as possible so they can get more information and keep moving ahead and moving ahead. Where in the end I'm really not doing them a favor at all! I'm just making them *more* dependent on me rather than less!

A person's values inform his philosophy and teachers' philosophies inform their decisions about best practice. In other discussions over the course of the school year, some teachers related their philosophy of teaching to their change in practice. Kathy pointed out that her philosophy of active and engaged learning stems from being in school as a child, “I remember years ago in school and students would go, ‘how do I spell ergonomics?’ and the teacher would say, ‘go look in the dictionary.’ Where with us (indicating the teachers at the table) I look and I tell them. And then I think, ‘why am I doing all the work? You're (the students) the ones trying to learn.’” She went on to say, “that's what I'd like to solidify –that the students are doing the work to learn!” Robert and Jason agreed with her.

Robert: “You're doing all the work before you give it them (students)!”

Jason: “I know what you're going to say! High schools are the place where you walk in and the kids are all going (makes a dull, bored face) and the teachers are all frantically running around.”

Robert: “yeah! Why are we doing all the work?”

These teachers “buy-in” of and desire to implement problem-based learning stems from a philosophical belief in experiential learning –learning which is active, meaningful

and engaged for the student. Mary was pleased that she was finally able to use the Critical Skills Classroom Model. She stated,

That's where I've always wanted my classroom to be. I just couldn't figure out how to get there. So now I'm seeing the possibilities of where I can go. My philosophy hasn't changed. How I'm getting there has changed. This has been a dream and now I'm thinking, 'ok it might be a reality!' So, philosophy has stayed the same but attitude has done an about face.

This journey Mary referenced was a common metaphor for teachers experiencing change in methodology. As teachers journeyed together over the course of the year, they shared similar characteristics of the trip. "For me it's been a roller coaster. Days where I'm gung ho behind it and days where the delays and snow days and missing half your classes because of sickness and whatever, it's just too much!" Many teachers spoke of the difficulties they experienced on their journey. Two related and common difficulties were the lack of time and the number of interruptions to class time. Kyle identified a lack of time with regard to planning. "Number one (on the list of challenges) is time. It seems to always be the challenge to develop and deliver what I would consider quality activities with authentic assessment and not spend every waking hour planning, developing and implementing that." Mary agreed with Kyle. "None of us have time to do that. I mean, there are only so many hours in the day." She went on to specify that regarding one aspect of the problem-based classroom that she put in place, "is great for the kids, but for me, the time management piece. Assessing all the pieces literally adds an hour to my day."

This experience of not having enough time to plan also compounded in its effect on teachers' curriculum delivery. Robert, when talking of his experience said, "Am I behind? Absolutely! About four units!" Mary agreed that "it (using this method) takes a

lot longer because it's new. We're about a month behind curriculum-wise and we're running out of time because these students need to get to a particular point to get their college credit." And Deirdre, Gina and Kathy laughed and joked in February about being behind in their curriculum. "We're never going to catch up." "Catch up? You're actually trying?" "Oh no. For me it's a lost cause." Ellie identified this as "the classic struggle. You know 'how do I deal with the fact that it takes twice as long?'" Mary summarized the experience of being behind. "It's going to be a journey and I keep telling myself that it's ok to be behind. The kids are getting a better education because of it (her work implementing problem-based learning). And for now that's going to have to be ok." To conclude the characteristic of lack of time as an impact on teachers' journeys in methodology change, it is once again interesting to note that every teacher who returned a survey at the end of the year rated "finding time to plan" as the "greatest obstacle in effecting change within their classrooms this year."

The teachers' common experience of lack of time was impacted by a variety of interruptions to the process of learning. When asked what she found difficult with regard to her work implementing problem-based learning in the classroom Mary responded with, "I would say particularly with snow days, early release (days), (school) delays, the stomach bug that's going around, the opportunity for me to have consistency in my classroom has been very hard." She elaborated on this difficulty, even citing curriculum related activities as a form of interruption in a couple of different journal entries. She wrote,

9/26/2007: I always seem to find myself in this "pressure cooker" each and every year due to the fact that I have so much to cover with my students: state

competencies, college dual enrollment curriculum, operating the school store, our youth leadership group –DECA, and the normal class interruptions.

11/13/07: We had an in-service yesterday. This is going to be an odd week as I am out for a conference on Wednesday and I am taking my students on a field trip Friday.”

At Holiday time, Jason’s horticulture students sell wreaths and Christmas trees to the larger Riverfield community and during an informal visit he talked about this –though it is part of his curriculum- as a distraction that interrupted his focus on The Critical Skills Classroom. “Well, I’ve kind had to put all that on hold for now. This week in particular is crazy for us and we’re all just kind of in a holding pattern in order to get these orders out.”

During a focus group session, the rate of interruption to the classroom was a topic of humor as the participants listed off the things that got in the way of implementing a problem-based classroom: “fire drills,” “Winter Carnival,” “The holidays,” “snow days,” “teacher and student absences,” “in-service days,” “brownies in the office!”

The personal experience of teachers who are implementing change in their classrooms stems from a sense of self as a teacher. With existing values and philosophies of education, teachers embarked on “rushed and interrupted journeys” as they underwent the experience of implementing problem-based classrooms.

Summary

The Twin River Technical Center is a school in the process of unique changes. Virtually its entire faculty and administration embraced the adoption of a problem-based learning methodology in the classrooms. The research from this school provided a picture of the practice of classroom teachers who are implementing The Critical Skills Classroom methodology in their own classrooms within this school culture embracing change. The teachers' focus on students was a driving force for them as they worked towards curriculum goals and visions of student success. Working within a culture of change provided levels of support for the teachers at both personal and collegial levels as well as at the level of the infrastructure. The personal experiences of teachers stemming from their sense of self moved them on a journey that was not without its difficulties as they worked to change the focus of their instructional delivery from one of traditional base to problem based.

CHAPTER 5

DISCUSSION

I will conclude this research study with a discussion and interpretation of the results especially as they relate to the theoretical framework preceding this study. A discussion of the results that resonate with the literature and those that generate more questions as suggestions for future research will be the focus. I will close with conclusions regarding the implications for teaching and learning based on the results of this study situated within the larger research venue of school change.

Introduction

The teaching profession is layered with co-dependent facets (Olsen, 2009). Looking at the practice of changing an instructional method requires an understanding of the change process. An examination of instructional change requires not only looking at the behaviors of the teacher while she is in the classroom, but knowing what the teacher's underlying assumptions are about her own practice and what her sense of self-efficacy is as a teacher. While changing the practice of teaching references the "delivery" of curriculum, it can be ironically easy to overlook the purpose –students. A close study of the practice of changing instructional method requires looking at how teachers approach and work with students. Understanding how instructional change happens requires looking at the influences of the culture of the staff and school building within which she is working. Finally, understanding change in the classroom requires an assessment of the demands on a teacher's time in her professional life, and, among other things, it requires a comprehension of the influences of the institution of public education itself on the

teacher's work in the classroom. John Bransford, Linda Darling-Hammond, and Pamela LePage (2005) compare the hidden work of teaching to that of a conductor.

To a music lover watching a concert from the audience, it would be easy to believe that a conductor has one of the easiest jobs in the world. There he stands, waving his arms in time with the music, and the orchestra produces glorious sounds, to all appearances quite spontaneously. Hidden from the audience – especially from the musical novice- are the conductor's abilities to read and interpret all of the parts at once, to play several instruments and to understand the capacities of many more, to organize and coordinate the disparate parts, to motivate and communicate with all of the orchestra members (p. 1).

Thus, changing the practice of instructional delivery in the classroom is an intricately, complex and wonderfully tangled process that requires not just a broad stroke of a brush, but the expertise of a master who is capable of both seeing the finished work while attending to a minutia of detail barely comprehensible to the lay person's eye. This complexity of changing instructional practice was evident in this study. The categories that emerged from the data, easily embraced the basic tenets of education change discussed in the literature. In the following pages, I will trace the categories of this study, 1.) practices of changing instructional delivery, 2.) teacher focus on students, 3.) elements of working within a culture of change and 4.) personal experiences of implementing a change in instructional delivery as they relate to the theoretical framework of change in instructional delivery.

Category I: Practices of Changing Instructional Delivery

The first category discussed, the practice of changing instructional delivery, echoed the difficulties teachers have in their own sense of self-efficacy as referenced by Rosenholtz (1991). The emotional roller-coaster of teacher investment as the change processes unfolded spoke to the tenuous nature that underlies the work of the teacher (Hargreaves, 2003). Because they primarily judged their work on the immediate reactions of their students, teachers within the study found their emotions held hostage by the changes they were trying to initiate. The variety of strategies teachers chose to use in implementation, spoke to the pressures of immediacy that researchers such as Huberman (1983) and Kennedy (2005) referenced in their discussions of the work of the teacher. Overall, I found the results of this category to resonate strongly with existing literature.

Category II: Teacher Focus on Students

The second category that emerged from the data was a surprise. Though the care and concern the teachers in this study showed for their students *was* captured by Michael Fullen (2001) when he wrote, “teachers are ‘moral change agents’ –that the moral purpose of schools is to make a difference in the lives of students and that making a difference is literally to make changes that matter,” the change literature that I mined *did not* suggest a teacher focus on students as a predominant element within a change in instructional practice (p. 123). The literature I found did, however, embrace a need for change due to the changing context of future employment and global markets. Hull, et. al (2009) write, “arguably, the most important economic, cultural and social trend of the past half century continues to be globalization, the radical intensification of flows of

capital, people, services, expertise, goods, texts, images and technologies around the world and across national and regional borders” (p. 119). It is because of implied demands of this market that teachers felt compelled to implement changes in their practices. Deirdre expressed her personal obligation to change by describing the differences she sees between the world her students will enter and the world she entered. She said, “for my students, it isn’t going to be about filling out an application that asks them whether or not they can be a short order cook. That isn’t going to cut it anymore. They need to be able to understand the job market and they will need a subset of skills to find their way.” Taken as a whole, while the results of this study did show that teachers are feeling a need to change their instructional practice because of the changing global markets and increased global interdependence, their concern for students as they implemented these changes was not a predominant element in the literature.

Category III: Elements of Working within a Culture of Change

The results of this study showed that the teachers’ experiences of working within a culture of change echoed the theories of Michael Fullen (2005) in his discussions of communities of change. A basic tenant of his work is that change can successfully take place if it is focused, has the acceptance of a majority of players and is allowed to take place over an extended period of time, ideally three to five years (2001). He argues that outside change agents “play an important part in initiating change projects” and that “professional learning communities [help] teachers constantly search for new ways of making improvements(p. 60). All of these things were in place at the Twin River Technical Center. Also, the lack of isolation that teachers felt due to the fact that many

of these aspects *were* in place at TRTC resonated with the literature discussing the *negative* effects of isolation (Lortie, 1975; Little, 1993; Wagner, 1994). The supports that were in place at TRTC resulted in teacher attitudes and actions that enabled the change process as opposed to inhibiting it as the literature suggests.

Category IV: Personal Experiences of Implementing a Change in Instructional Delivery

The teachers at TRTC frequently referenced their work to change their instructional practice as that of a personal journey full of its own emotional upsets and highs. These emotional aspects of their change experiences reflected the literature that focused on the work of the teacher. Stephen Ball and Ivor Goodson (1997) reference this aspect of the “subjective career” in the introduction to their literature review, *Teachers’ Lives and Careers*. “By definition, individual [teaching] careers are socially constructed and individually experienced over time. They are subjective trajectories through historical periods and at the same time contain their own organizing principles and distinct phases” (p. 11). Susan Rosenholtz (1991) best speaks to the emotions of teaching in her study of teacher “self-efficacy” and its accompanying sentiments. The TRTC teachers’ self identities and related sense of self-efficacy shaped and were shaped by their journeys as they changed instructional practice. Equally, as is the case with virtually every journey, the data revealed an enormous struggle against time on the part of the teachers who were implementing change. This lack of professional time is riddled throughout the literature (Little, 1993, Lortie, 1975, Kennedy, 2005) and is well

described by Robert Evans, “Of all the complaints of teachers about the difficulties of change programs in schools, none is more frequent than, ‘not enough time.’ Whether it is site-based management or authentic assessment, integrated curriculum or new technology –or, most commonly, when it is all of these and other initiatives too –there is never enough time to support the innovation” (2001, p. 139). In general, the data results of teacher experiences of an emotional journey constrained by lack of time to do all that needs to be done was congruent with similar research literature.

Further Research

As with any study, this had its imperfections. Because of the opportunity, that of virtually an entire faculty committing to changing their predominant nature of instructional delivery from a theoretically traditional one to a theoretically progressive one, this study would certainly have benefitted from more research both in terms of depth as well as in terms of time. The richness of data that emerged from the interviews and focus groups led me to realize that had I more time, more interviews and focus groups with other members of the faculty would have been informative. Also, as the faculty is now in its second year of implementation, it would be edifying to continue the study into this second year. Finally, my proximity to the research as a researcher might have had its effects. It would have been revealing to have had a second researcher, a second set of eyes, on this research as well as my own.

Thus, more case studies like this would be enlightening. As with any qualitative research, layers are required to provide clarity. It would be instructive to research the experiences of other types of teachers under similar conditions. What would the

experiences of high school or middle school or elementary school teachers be and how would they compare to the experiences of the teachers at RVTC? Also, it would be helpful to study teachers who try to initiate an instructional delivery change in their classrooms without the support of a community of teachers who are doing the same. What would the differences be? Finally, what of other types of changes in instructional practice? All of this would add not only to the results of this study, but would provide a more comprehensive picture of the experiences of change in the classroom.

Implications for Teaching and Learning

The results of this research put a spotlight on the hidden complexities of changing classroom practice. They echo Andy Hargreaves (2003) ideas of teaching as a paradoxical profession.

Of all the jobs that are or aspire to be professions, only teaching is expected to create the human skills and capacities that will enable individuals and organizations to survive and succeed in today's knowledge society. Teachers, more than anyone, are expected to build learning communities, create the knowledge society, and develop the capacities for innovation, flexibility and commitment to change that are essential to economic prosperity. At the same time teachers are also expected to mitigate and counteract many of the immense problems that knowledge societies create, such as excessive consumerism, loss of community, and widening gaps between rich and poor. Somehow, teachers must try to achieve these seemingly contradictory goals at the same time. This is their professional paradox (p. 9).

What are the implications of this? If we are to truly effect meaningful and needed change in any single school building, the results of this research indicate that several things need to happen that currently are not happening –at least not with any consistency. First, the change needs to be meaningful to the classroom teacher. With this study, the

change was meaningful because the classroom teachers felt they were unable to meet the needs of their students by continuing to teach in the same way. They wanted to change their practice because they cared about their students and about helping their students to develop the skills they needed to be successful in their lives.

Second, there needs to be an infrastructure of support embedded within the change. Teachers need to embrace the change within a community of others who are experiencing the same successes and difficulties. They need time embedded within the schedule to talk with each other about their work within the change. Also, teachers need the support of an administration who understands the language, effects and desired results of the change and who can articulate this to parents. The administration needs to have a level of understanding of the change the teachers are trying to implement so that there is a safe culture for teachers to experience both success and failure.

Meaningful change that is supported in a number of ways is likely to be successful change. It is as if there are a number of darts continuously being thrown at a single target. With time, the target is covered. Having a number of supportive elements in place for teachers who are working to change their instructional delivery creates a culture of support, without which, change in the classroom becomes much more difficult and much less likely to be successful.

The teaching profession is one that must, by its very purpose and nature, continue to grow and change if it is to continue to meet the needs of an ever more demanding world. In fact, the demands of a global society stand only to increase as populations increase, communications grow more complex and the infrastructures widen. Like ever-widening concentric circles, the world of education and the world of the Twenty-First

Century are linked in inextricable ways. Thus, we must, continue to embrace change in the classroom if we are to embrace change in the future.

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